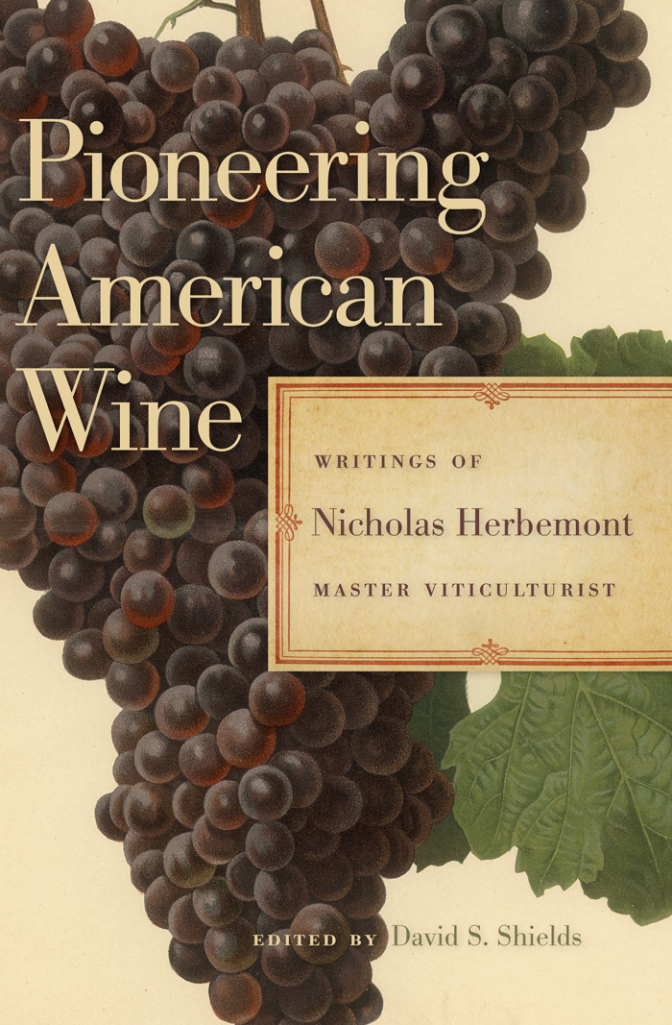
Pioneering American Wine
WRITINGS OF
Nicholas Herbemont
MASTER VITICULTURIST
EDITED BY David S. Shields

VISIT…

Pioneering American Wine

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Pioneering American Wine

Writings of Nicholas Herbemont, Master Viticulturist

Edited by David S. Shields

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For Bernard & Rebecca Herman

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Contents

Acknowledgments *ix*

Introduction *1*

Part One. Maxims *31*

Part Two. Treatises

An Essay on the Culture of the Grape Vine, and Making of Wine; Suited for the United States, and More Particularly for the Southern States (January–July 1828) *39*

Wine Making (January 23, 1833) *86*

Part Three. Published Letters on Grape Growing and Wine Making

Requisites for Success in Grape Cultivation (January 22, 1820) *109*

Acculturation of French Vines (December 6, 1822) *113*

On the Culture of the Grape (August 20, 1826) *117*

On the Use of Sugar in Making Wine (August 27, 1826) *124*

Speech to the Agricultural Society of S.C. on the Benefits of Publicly-Sponsored Grape Cultivation (February 17, 1827) *130*

Memorial to the Senate of South Carolina (December 1826) *135*

Domestic Wine (December 23, 1826) *139*

American Wine (January 18, 1828) *141*

Pruning Grape Vines (April 20, 1828) *144*

Letter to Nicholas Longworth on the Grape Vine (March 19, 1829) *149*

Cultivation of the Grape (August 12, 1829) *157*

Letter to Edward Stabler on Wine-Making (September 9, 1829) *161*

On the Proper Distance for Planting a Vineyard (December 7, 1829) *167*

Pruning Frost-Nipped Vines (March 22, 1830) *172*

On the Culture of the Grape Vine, with Observations on the Practice Recommended by Various Writers (March 30, 1830) *176*

Letter to an Alabama Planter (July 9, 1830) *183*

On the Formation of Vine-Yards of Native Vines, and the Ingrafting of Grape-Vines (September 4, 1830) *189*

Table Grapes (October 26, 1830) *195*

Herbemont's Madeira (May 27, 1831) *201*

Observations on the Rot of the Grape, and Grafting of Foreign Vines on Native Stocks (September 4, 1831) *203*

Afflictions (September 24, 1831) *206*

Letter to George Fitzhugh, Jr. (September 2, 1832) *210*

Observations on the Planting of the Vine and Rot in Grapes (May 28, 1833) *213*

Letter to Edmund Ruffin (November 18, 1833) *219*

On the Causes of Failure in Vine Culture and Wine Making (November 15, 1834) *224*

Origin of "Herbemont's Madeira" Grape (February 1835) *230*

Difference of the Growth, Culture, and Product of Grape Vines, in the United States and in Europe (April 29, 1836) *232*

On the Suitableness of Warm Climates for Wine Making (February 15, 1837) *238*

Grape Culture in South Carolina (September 9, 1837) *241*

Letter to Sidney Weller on Grape and Silk Culture (March 8, 1838) *245*

Part Four. Agrarian Essays

Observations Suggested by the Late Occurrences in Charleston, by a Member of the Board of Public Works, of the State of South-Carolina (1822) *251*

Address to the President and Members of the United Agricultural Society of South-Carolina, at Their Sitting in Columbia (December 1, 1828) *261*

Honesty Is the Best Policy (March 1832) *268*

On the Moral Discipline and Treatment of Slaves (February 1836) *275*

Bibliographical Essay *281*

Bibliography of Primary Sources on Wine Making in America, 1810–1840 *289*

Index *293*

Acknowledgments

The idea of collecting the writings of Nicholas Herbemont arose after a conversation with Dan Longone, emeritus professor of chemistry at the University of Michigan and a wine savant with a penchant for history. When he and his wife, Janice Longone, the culinary archivist, attended "The Cuisines of the Lowcountry and the Caribbean" conference held by the College of Charleston in 2003, we got to talking about early southern viticulture. Dan Longone wished to know where Nicholas Herbemont's vineyard had been located. I did not know, but vowed to find out. After relocating from Charleston to Columbia, South Carolina, later that year, I began my first inquiries into Herbemont's career. Few knew anything of his doings, and no one knew where the vineyard had been located. So I went into the microfilms section of the Thomas Cooper Library at the University of South Carolina to begin a systematic survey of the early horticultural and agricultural magazines of the United States in search of Herbemont. With each letter, tract, and speech I uncovered, the more I became fascinated with this visionary viticulturist. During the years of research, I communicated my enthusiasm about Herbemont to numerous friends in the world of heritage foodstuffs and foodways—Glenn Roberts, Merle Shepherd, Emile Defelice, Bernard L. Herman, and John T. Edge. Dr. John Nelson of the University of South Carolina herbarium showed me the historical collection of grape specimens from the southern United States. Dr. Mac Horton of Clemson University's Sand Hills Experimental Station set into motion plans for the re-creation of Herbemont's vineyard near its original site along the Old Camden Road in Richland County. My introduction and commentary on Herbemont's writings were expertly critiqued and improved by the two most knowledgeable historians of early American grape growing and wine making, Thomas Pinney and John Hailman. My research in the South Carolina Archives was greatly aided by Dr. Chuck Lesser, and long-distance queries to the South Carolina Historical Society expertly assisted by my friend, archivist Jane Aldrich. Thank you all.

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Pioneering American Wine

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Introduction

Nicholas Michel Laurent Herbemont (1771–1839) styled himself a "visionary," an "enthusiast of the vine." He prophesied a day when American wine making would equal that of his native France. In the late 1820s he won recognition as the finest practicing *vigneron*—winemaker—of the early United States. Gideon B. Smith, editor of the country's foremost agricultural journal, the *American Farmer*, and a Maryland connoisseur who had sampled wine from all the reputable vintners of the nation—including John James Dufour, John Adlum, Thomas McCall, George Fitzhugh, and Nicholas Longworth—in 1832 voiced the verdict of his generation: "The wine that Mr. H. calls the white wine, is really the most delicate and delicious flavored of any we ever tasted."[1] Smith and his circle of Maryland grape growers implored Herbemont to publish his method of wine making. This Herbemont did in a two-installment treatise, "Wine Making," published in February 1833 in the *American Farmer*. The journal declared, "*We consider it very far superior to any treatise extant*"—a significant assessment since *American Farmer* had reprinted in its pages the works of John Adlum, John James Dufour, and William Prince, the other patriarchs of American viticulture. Reissued in pamphlet form and reprinted in several magazines, "Wine Making" would stand as the most widely read and reliable American guide to the art of producing potable vintage for a generation.[2]

As a *vigneron*, Herbemont radiated a confidence in his art that could have only arisen with mastery: "If Bachus himself could condescend to pay us a visit and drink some of my wine, he would readily acknowledge that he never had drank better in his lifetime, and not often as good!"[3] No aesthetician of taste had a more profound influence for the good in the early republic. By tireless campaigning—screeds, manifestoes, instructions—he nudged the country (winemakers and consumers) from its penchant for fortifying wine with brandy and taught it to savor wine born of "the juice of the grape." He tempered American winemakers' too liberal use of sugar to boost the alcoholic content of wine (Major John Adlum used three pounds of brown sugar per gallon of juice) and championed delicacy as a quality. He insisted on science in agriculture and boldly challenged custom in vineyard management, testing experimentally the most widely held methods of growing, pruning, processing, and fermentation in Europe to see which proved effectual in the southern environment. By these efforts he overthrew the European

practice of growing grapes close to the soil and popularized high trellising, a technique that maximized air circulation and contributed substantially to the control of black rot, the chief fungal affliction of American vineyards.[4]

His practice of grafting scions (cuttings) on native roots, begun on a large scale in 1819, countered the depredations of the vineyard's most fearsome insect scourge, phylloxera. His directions on grafting became the standard instruction of antebellum viticulture.[5] He cultivated a host of native and imported varieties (over three hundred in the course of his career) in a garden the size of a city block in Columbia, the capital of South Carolina, and in a vineyard at Palmyra, his plantation, among the sand hills on Camden Road in Richland County.

Knowledge, rather than wine wealth, drove his efforts. Though he championed the commercial development of wine making by Americans and sold wine to the public from 1823 to the end of his life, he loved experiment more than profit. He never expanded his vineyard much beyond ten acres total, while Abraham Geiger in Lexington County, South Carolina, tended forty acres and James McDonnald in Aiken over sixty. His vineyard and garden produced modest quantities of wine from half a dozen varieties and permitted the study of a multitude of grape varieties in southern soil and climate.[6] He declined to form business partnerships of the sort that pioneer vintners Peter Legaux and John James Dufour devised to float their vineyards. Nevertheless, Herbemont knew that his most avid disciples desired wealth from vineyards planted with hundreds of acres in two or three kinds of saleable wine or table grapes, and he wrote to encourage these wishes. As a commercial vintner, his practices were inconsistent. He sold his wine at a price (two dollars per gallon) higher than that of any other winemaker in the country, yet he sold his vine cuttings at cost and distributed sample demijohn bottles of his vintages gratis to an international network of "scientific and practical men."

Herbemont's gifts of wine may have been tokens of solidarity. In the United States he joined a beleaguered network of agricultural reformers—agronomists who envisioned a sustainable American agriculture based on crop rotation, scientific soil replenishment, diversified production, and deep plowing.[7] In South Carolina he numbered among the half-dozen most deeply committed reformers and, in 1818–19, organized and chaired the Agricultural Society of South Carolina.[8] He saw himself as an experimentalist—an agricultural practitioner who subjected customary practices to critical scrutiny and testing—who communicated his findings to a community of like-minded persons that shared information on the most effective procedures of cultivation and who sought to understand on a theoretical basis what happened in the vineyard and wine cellar. Experimentalists dominated American agricultural improvement from the 1810s to the 1870s, at which time scientific investigation and explanations superceded experimentalist suppositions.

In 1820, when the first periodicals devoted to agriculture began regular publication, Herbemont penned the first of the sixty writings he would publish in his

lifetime. Throughout the 1820s and 1830s he wrote for the agricultural press more extensively and knowledgeably about American grape growing and wine making than any of the other literary fathers of viticulture.[9] The men who established the commercial production of wine in the country refined their art by reading his instructions. Nicholas Longworth, the first man to make a fortune in wine in America, may have secured the original vines for his still and sparkling Catawba wines from Major Adlum, but he planted them and processed them heeding Herbemont's instruction.[10] In a letter to Longworth in 1829 Herbemont posed the question that would guide Longworth's path: "Why not be satisfied with any good wine, sui generis, which the country, soil and climate permit to make, and which, though different, may be of equal value, or perhaps superior to the imported ones?" (March 12, 1829). Adlum's path would have been to sell Sparkling Catawba as Champagne. Longworth, heeding Herbemont, presented his vintage honestly, as Sparkling Catawba.

Herbemont's visionary genius took flight most daringly when he dreamed of a new order for the agricultural South. He wished to see the sand-hill pine barrens of the South peopled by a free population of European vignerons and an agriculture based on yeoman farming and wage labor rather than African American slavery.

A romantic man of feeling as well as a post-Enlightenment man of science, Herbemont exerted himself on behalf of the disadvantaged peoples of his community. He advocated the humane treatment of the mentally ill as president of the Board of Regents of the South Carolina "lunatic asylum." He appealed for the amelioration of the condition of slaves as spokesman for the Society for the Advancement of Learning at Columbia. A moralist who built an ethical system around the values of honesty, efficiency, happiness, and cheerfulness, he fought the sumptuary Puritanism of temperance radicals and evangelical ascetics. (In 1836 the American Temperance Society proclaimed the doctrine of teetotalism, total abstinence from consumption of alcoholic beverages, identifying wine for the first time in its literature as a cause of intemperance and immorality.)[11] Good natured, witty, deferential, well read, and genteel, he inspired admiration even among the politicians, agriculturists, and authors who scorned his ideas. At a time when agriculture dominated the commerce and modes of life of the United States, Nicholas Herbemont articulated an agrarian culture striking for its integration of science, practicality, aesthetics, and ethics.

Not every vision Herbemont proclaimed came to pass. The Piedmont of Carolina did not become a district of Swiss refugee wine makers. He acclimatized fewer than 20 of the 264 varieties of *vinifera* grape he secured during an 1821 expedition to France. At the end of his life his vineyards had sustained fifty-eight of the more significant *Vitis vinifera* varieties, yet never in a condition so flourishing or an amount so abundant as to merit wine production on a commercial scale. The legislature of South Carolina declined to bankroll his scheme for transforming the

labor and agricultural systems. Yet many wishes and prophecies were fulfilled. An immigrant population of European cultivators did eventually turn America into a wine-producing country whose finest productions rivaled the greatest in France, Germany, and Italy. Experimental inquiry did break the thrall of custom in wine making and countered the old intractable obstacles to success—rot and insect depredation. The taste for fortified wines declined over the nineteenth century; popular taste refined by gradual degrees. In these last developments he played a signal part.

This volume collects the most important writings of Nicholas Herbemont. It includes his two major treatises on viticulture, "An Essay on the Culture of the Grape Vine, and Making of Wine; Suited for the United States, and More Particularly for the Southern States" (1828) and the previously mentioned "On Wine Making" (1833); twenty-eight of the thirty-three published letters on vine growing and wine making written between 1820 and 1838; his memorial to the South Carolina Senate of 1828; and portions of four essays that distilled features of his agrarian philosophy. These last painted the broad picture of agricultural civilization he envisioned for a future South. His *Observations on the Recent Occurrences in Charleston* (1822) introduced his vision of diversified agriculture for the South. His ethics of rural life and work appeared in his 1832 prize essay, "Honesty Is the Best Policy." His political economy instructed the arguments of his "Address to the President and Members of the United Agricultural Society of South-Carolina" (1828). His critique of the forced-labor regime of the plantation pervaded "On the Moral Discipline and Treatment of Slaves" (1835).[12] These pages contain much more than just a summary of the state of the art of wine making during the formative moment of commercial viticulture in the United States. Here we encounter as congenial, as hopeful, as forward-looking a philosopher of rural living as wrote in the period between the Revolution and the Civil War. A planter republican, without the ideological stridency of Thomas Jefferson or the hatred of urbanity that crazed John Randolph, he dispensed hope rather than tidings of doom. A reformer without ire (unlike his friend Edmund Ruffin), Herbemont wrote to increase the productivity and happiness of others rather than chastise their backwardness and ignorance. An epicurean rather than a hedonist, he celebrated moderate pleasures—cheerfulness and happiness rather than intoxication. A scientist and yet a practical man, his love of system did not stifle his curiosity and capacity for wonder. Of foreign birth, he embraced his adopted home, acting as a virtuous citizen, succoring those who lacked the ability to improve their own condition. If the great promise of the republic was the liberty of the private person to seek and find happiness, then Herbemont exemplified the fulfillment of that promise. He came to the country a refugee from revolutionary France. He married well, secured modest wealth, made his neighborhood beautiful, sought theoretical and practical knowledge of

botany and pomology, conversed and corresponded with many of the liveliest intellects of the nation, promoted cheerfulness, health, and humanity where he went, and died beloved of his community.

How do happiness, usefulness, and wisdom translate onto a page? In his style of speaking as much as in what he said. His writings show the manner in which that novel creature of the Enlightenment, the cheerful philosopher, expressed wisdom. He occasionally spoke of the fallen world of sin, avarice, and selfishness, so familiar to audiences of the early republic from the energetic apostles of the second great awakening, yet this sad place evaporated after a paragraph or dissolved in a mouthful of Madeira. Even in the midst of the tariff crisis of 1828, Herbemont spoke with civility, optimistic assurance, and imagination, revealing a love of the good and effective that completely overmastered doubt, resentment, and self-preoccupation. Was there a saner man who spoke to the Nullification Crisis in the South when John C. Calhoun and his followers called for separation of South Carolina from the Union? Was there a more congenial instructor in the practice of experimental agriculture, the art of wine making, or taste?

There is a problem in properly evaluating the importance of one who offers his expertise so modestly and recounts accomplishments so offhandedly. We risk misunderstanding the magnitude of his contribution to the intellectual history of agrarianism and the practice of a difficult art. To appreciate what Herbemont did, we should recall briefly the extraordinarily disappointing chronicle of efforts by colonists and settlers to transform the continent Europeans first styled "Vinland" into a place that produced palatable wine.

When the first European explorers cast eyes on the strange shores of North America, they saw a plentitude of native grapes. Thomas Hariot, Sir Walter Raleigh's man of learning on the Roanoke expedition, spoke the automatic thought of every colonial projector: "When they are planted and husbanded as they ought, a principall commoditie of wines by them may be raised."[13] But dreams of American vineyards would suffer repeated dissolution over the colonial centuries, as attempt after attempt to transplant European vines or render native grapes into something finer than vinegar failed.[14] The accomplishments of isolated savants such as Robert Beverly of Virginia and Col. William Cooke of St. Simon's Island, Georgia, were buried in their graves, their knowledge attracting no disciples and their vines neglected by their heirs and successors. Seeds and cuttings from France, Madeira, and Spain, shipped repeatedly and in large numbers into North America during the colonial and early national periods, withered, rotted, or drowned. *Vitis vinifera* would not flourish. Native vines, trained into arbors, would raise hopes with hardy beginnings and then expire, victims of "the black rot,"[15] harsh weather, rapacious birds, or insects.

In creating the new republic, the founders reproclaimed the old colonial policy of establishing viticulture as an American manufactory. Despite the subvention

of Peter Legaux's plantings by the government,[16] the vocal support of Presidents Washington and Jefferson, the assistance of European nations in supplying *vinifera* stocks, and the good wishes and informed suggestions of a continental community of interested farmers, amateur botanists, and learned planters, no progress in overcoming the perils afflicting vineyards came until the 1820s. Jefferson's failure to produce a vintage at Monticello from the dozens of cuttings procured from the great vineyards of Bordeaux and Burgundy during his diplomatic residence in France dramatized the extent of the difficulties facing American grape cultivators. Having observed vineyard management during tours of the Rhine, Mosel, and Champagne, having systematically quizzed expert growers and winemakers about their practices, having grown fruits, vegetables, and grains on his Piedmont farms successfully for decades, Jefferson possessed the sort of scientific orientation, expert information, and practical experience in agriculture that should, by rights, have resulted in good vintage, if success might be had by replicating the European methods in Virginia.[17] But the various grape afflictions endemic to the American landscape did Jefferson's vineyards in. French methods would have to be adjusted, or abandoned, if wine were to be made on a commercial scale in the United States.

Creating an American method of viticulture was the task of a generation of experimenters, such "scientific and practical" men as John Adlum and George Fitzhugh in Maryland; John James Dufour in Vevay, Indiana (a settlement on the Ohio River halfway between Cincinnati and Louisville); Nicholas Longworth in Cincinnati; Thomas McCall of Dublin, Georgia; George Gibbs, William Prince, and William Robert Prince of New York; Sidney Weller of North Carolina; and Abraham Geiger, John Davis, and Nicholas Herbemont in South Carolina. This group systematized the arts of vine growing and wine making in American environments and published their findings in pamphlets and articles. Adlum's *A Memoir on the Cultivation of the Vine in America and the Best Mode of Making Wine* (1823) and *Adlum on Wine* (1826), Dufour's *The American Vine-Dresser's Guide, Being a Treatise on the Cultivation of the Vine and Process of Wine Making Adapted to the Soil and Climate of America* (1826), and Herbemont's "An Essay on the Culture of the Grape, Vine, and Making of Wine Suited for the United States, and More Particularly for the Southern States" (1828) and *Wine Making* (1833) decanted the experience of the first generation of experimental winemakers—vignerons who refused to follow European custom and *methodically* sought to create an effective practice suited to American conditions.[18] These writings comprise the first *American* literature on effective vine growing and wine making, pointedly departing from European instructions on vineyard management. That European instruction had been memorably systematized for Americans in 1830 in the pages of William Robert Prince's *Treatise on the Vine*, a survey of cultivated grape varieties in Europe and America with a "Complete Dissertation on the

Establishment, Cultivation, and Management of Vineyards."[19] (Prince did not supply a method of wine making.) Most of the experiential wisdom offered by Adlum, Dufour, and Herbemont had been gained in the southern Piedmont—Adlum's on the Maryland hills lining the Potomac at Georgetown, Dufour's in Kentucky, and Herbemont in the Santee sand hills of Carolina. These are areas particularly troubled by black rot and phylloxera. While each made a signal contribution to American viticulture generally,[20] Herbemont supplied the most radically novel and experimental conceptualization of vineyard and cellar practices that contributed to controlling afflictions of the vine.

Viticulturists had to devise four techniques before these problems could be controlled. Because black rot is a fungus (*Guignardia bidwellii*) that requires moisture to germinate and remains dormant over winter on the vine, it can regenerate in the same plant year after year. Vines resist this fungus only if planted and trellised in such a way that they dry quickly, are pruned aggressively and systematically, and are sprayed with a fungicide. Without knowing the pathogenic agent causing the disease but recognizing moisture as its precondition, Herbemont's arbor-building practices minimized the damage caused by black rot. He built high trellises, maximizing air circulation to evaporate moisture from the grapes and vines. He pruned diseased portions of his vines thoroughly. He did not employ a fungicidal spray, for his experiments with Samuel R. Johnson of Massachusetts's 1829 sulfur spray recipe for preventing mildew found the treatment ineffective for black rot.[21] No effective fungicide for black rot would be discovered until after the Civil War. High trellising, pruning, and fungicide would be combined in a standardized vineyard practice by Frank Lamson Scribner, who codified the rot- and insect-prevention regimen for American vineyards in the 1870s.

Phylloxera, a minute, pale insect whose nymphae feed on vine roots and whose adults suck the sap from vines and leaves, could only be managed by grafting vines onto those few species of native or hybrid grapes whose roots were resistant to infestation.[22]

While Herbemont's recommendations on trellising and pruning may have had the greatest immediate impact on American wine making, his techniques of grafting scions of all sorts on hardy native *Vitis aestivalis* rootstocks, particularly his favorite Herbemont Madeira grape, were extraordinarily consequential in the long term. Grafting is an ancient technique, used to speed growth. The typical grapevine requires four growing seasons to develop into a productive bearer of fruit. Herbemont ranged the Carolina forests for wild vines to transplant as fully developed rootstock for his scions, boosting the vitality and rapidity of plant development and producing fruit in one or two seasons. He began the practice in the spring of 1819, grafting one hundred cuttings on wild vines.[23] He undertook the experiment believing success would "prove of invaluable advantage in many points of view."[24] It would in the course of time prove critical for the survival of the Western wine

tradition, for Herbemont discovered by accident that grafted plants, particularly those of different grape species, proved more resistant to infestation and disease. Herbemont did not know that grape phylloxera, *Daktulosphaira vitifoliae*, caused the defoliation of *Vitis vinifera* plants (it would only be identified definitively in 1867); but he observed that grafted scions did not suffer the ravages of those grown from cuttings planted directly in soil. He promoted grafting as an antidote to crop "failure." When phylloxera invaded France in the late 1860s, the famous *vinifera* varieties grown in France were only saved by transplantation onto roots of the Herbemont and Lenoir grapes,[25] then, later, by regrafting them onto more resilient and productive Riparia Gloire de Montpellier or Rupestris du Lot rootstocks.[26]

Perhaps only a Frenchman born in Champagne, educated in classics and science, and thoroughly schooled in the growing techniques practiced in both Old World and New could declare so authoritatively that the traditional practices of Europe must be jettisoned in America and still receive a hearing. Only someone who combined the most refined appreciation of the best European wines with an adventurous taste could argue so persuasively that the vines of the American forests might yield vintages as splendid as those of his native land. Despite English being his second language, Herbemont possessed neoclassical eloquence as well as botanical competence. Only George J. F. Clarke of St. Augustine and William Robert Prince rivaled him as stylists. Herbemont graced his lucid prose with apt quotations, citing scripture when assuring his audience that wine drinking possessed an ancient and divine sanction, recalling Roman historians when remarking the antiquity of such vineyard practices as pruning or culling. His persona was that of a "man of parts," literate, learned, inquisitive, and experimental. When he offered a finding that contradicted the opinions of other authorities, he took pains to explain the grounds for his conclusion. His lack of undue deference was American; his painstaking empiricism, transatlantic and scientific; his sensuousness, French.

Herbemont embraced the promise of opportunity and the novelty of his adopted country, yet he never fully grasped the politics of his neighbors, the cotton and rice planters of South Carolina. He could not fathom why planters and legislators held such deeply rooted antipathy to governments taking initiative in agricultural enterprises. The Carolina senate's rejection in 1827 of his memorial requesting financial support for importing European vignerons to transform the state's barren midlands into vineyards dumbfounded him. He never understood the irrational emotional investment of his neighbors in a slave labor system that offered little incentive to industry, when a workforce of free Swiss immigrants could be secured easily who would people the Carolina sand hills and make it a Canaan of productivity. Though he repeatedly declared his support for his state and cherished his community, Herbemont never fully became a South Carolinian. His French Protestant cosmopolitanism lay beneath all his surface southernness.

Herbemont's Background

Nicholas Herbemont was born on January 28, 1771, into a Protestant family in the town of Joncheres, near Rheims, in the Champagne district of France. He had at least two brothers. He received a genteel education, but left France before the age of twenty-one,[27] emigrating in 1791–92 during the chaos of the French Revolution. He married a woman named Martha in France and had a daughter. The woman apparently died during the revolution, and their daughter was raised by his wife's family. A French grandson by this daughter, Paul Bofill, received the bulk of Herbemont's estate. Nicholas Herbemont settled briefly in Petersburg, Virginia, then moved inland, teaching French at the Pittsburgh Academy in the mid-1790s.[28] In 1800 he moved to Sullivan's Island on the coast of South Carolina. Over the next year he translated and published an English version of Jean-Louis Dubroca's *Vie de Toussaint Louverture*, a biography of the Haitian revolutionary. Herbemont soon realized that his language skills would be of use to political men in Carolina fearful about the influx of Haitian refugees and black insurrectionists into the state in the wake of that island's revolution. Herbemont removed to the inland capital, Columbia, and married the English-born widow and heiress Caroline Neylor Smythe.[29] He secured the position of French instructor at the newly organized College of South Carolina.[30] He served in this capacity in 1807, 1808, and 1811–17.

His wife owned an entire city block in walking distance from the college, an area now bounded by Gervais, Bull, Lady, and Pickens streets. He erected a townhouse on the corner of Bull and Lady and in 1809 planted an extensive urban garden. His friend, neighbor, and fellow vintner James Guignard constructed a mirror garden in the block diagonally across Gervais Street. These two blocks presented a botanical wonderland, inspiring ornamental horticulture throughout Columbia and gaining it the reputation of a garden city. In 1813 Herbemont organized a cut nail factory, a complement to Guignard's brick manufactory, that proved instrumental in assisting the building boom that developed Columbia. His experiments in viticulture began in 1809, commencing in his city garden where, along with half a dozen varieties of grape, he planted roses,[31] figs, plums, and apple trees. Sometime in the mid-1810s, Herbemont purchased a tract on the Camden Road in the sand hills a short distance from Columbia. This became "Palmyra," his experimental vineyard.

Late in the decade, he began publishing occasional letters of agricultural advice in the *State Gazette* and the *Telescope*, Columbia's newspapers. In 1818 he and J. P. Taylor, James Davis, Z. Rudulph, and J. M. Howell founded the South Carolina Agricultural Society located in Columbia,[32] with Herbemont serving as chairman of the governing "board of curators."[33] In 1829, after the society's expansion, he won its gold medal "for his successful experiments in the culture of the Vine and

the making of wine in this State." Herbemont served in the 1820s as an appointee on the state Board of Public Works and, later, as president of the Regents of the Lunatic Asylum,[34] posts in which he won praise for his conscientious handling of his duties.

He fathered a son, Alexander Herbemont, who possessed none of his scientific curiosity but all of his gentility, becoming American consul at Genoa, Italy. In 1834 Nicholas Herbemont's health began to fail, probably from malaria. Regardless, he experimented in his vineyards and gardens, perfecting an ever-bearing mulberry intended for use as hog feed, shortly before his death on June 29, 1839. Both his son and grandson died overseas of disease.

As the Agricultural Society's gold medal attested, his contemporaries regarded his wine-making enterprise as a success. Despite occasional weather-related crop failures (1828 and 1831 were particularly difficult years), he had from 1814 to 1837 produced crops of grapes, and from 1823 onward released vintages for sale to the public. He managed the two perils—rot and insect infestation—that had ruined every large-scale wine-making project in early America, including Dufour's Swiss colony in Indiana. He realized that rot, insects, and plant disease were endemic to the region and incapable of being extirpated; his aim, therefore, became the limitation of the damage they inflicted and the prevention of spoiled grapes from inclusion in the harvest crush. In the year before his death, despite a visitation of rot, his experimental plots produced 1,278 gallons of wine.

Herbemont popularized the cultivation of several grape varieties, particularly a large brown "Madeira" grape that came to bear his name. He made large-scale donations of cuttings to Nicholas Longworth in Cincinnati in 1828 (who introduced Herbemont to Catawba in return), to the Agricultural Society of North Carolina at Raleigh in 1830, to the Maryland Society for Promoting the Culture of the Vine in 1832, to a circle of winemakers in Alabama and Mississippi, and in 1833–34 to growers along the Ohio River, enabling the substantial expansion of viticulture in those regions.

The bill of lading for the North Carolina gift listed eleven varieties. The list with Herbemont's annotations was published in the North Carolina papers and republished in the *American Farmer*:

1. Bordeaux Table Grape . . . brought from France (without a name) by the late Gen. Davie. He got it as the best table grape. Some call it "Hungarian." It is a great bearer, but does not make good wine.
2. Long's Arkansas . . . spoken very highly of by the writer of Mr. Long's expedition.
3. White Melier . . . an excellent grape for the table and for wine. It ripens early.
4. Burgundy Miller . . . well known as an excellent wine grape.

5. White Malaga Malmsey . . . a most excellent table and raisin grape. It resembles Malaga which comes to us in jars. It is not so large, but very superior.
6. White Olivette . . . an excellent large oval grape.
7. Isabella . . . too well known to need description.
8. Arena . . . a native, which Dr. Herbemont has had some years in cultivation, by which it is much improved. It makes an excellent wine, when two or three years old. He calls it "Arena," because it is native of our sandhills.
9. Lenoir . . . called "Lenoir," from the name of the gentleman who first cultivated it on the High-Hills of Santee. It is a vigorous vine, makes an excellent red wine. Its fruit ripens in July, and never rots.
10. Bland's Madeira, or Rose Grape . . . excellent for the table, for raisins, and for wine.
11. Herbemont's Madeira. . . . If this was not, in wet seasons liable to rot, it might be unhesitatingly pronounced the best grape, in every respect, in the country. The wine it makes resembles the best kind of Madeira. It is one of the most luscious grapes for the table, and the most juicy, yielding upwards of 4½ gallons of juice from every bushel of fruit. It is also a great bearer, and a vigorous one.[35]

For wine enthusiasts of the twenty-first century, the list may be disconcertingly unfamiliar, since most have grown up in the era of French dominion over the public palate. The varieties that appear on the retailers' shelves—*Vitis vinifera* varieties Cabernet Franc, Cabernet Sauvignon, Chardonnay, Chenin Blanc, Grenache, Malbec, Merlot, Muscadelle, Muscat, Petit Verdot, Pinot Gris, Pinot Meunier, Pinot Noir, Sauvignon Blanc, Semillon, Syrah, and Viognier—have been transplanted to the vineyards of California, New York, Oregon, and Washington State thanks to the efforts of such academic oenologists as Maynard Amerine and Konstantin Frank. Yet prior to the 1930s, American viticulture was dominated by hybrid grape varieties that mixed native and European traits. Local traditions—the cultivation of the Norton grape in Missouri, the Herbemont grape in Texas, the Catawba grape in Ohio, the Isabella and Concord grapes in New York—declined after the reorientation of American wine making in the wake of World War II.

Herbemont's vineyard practices helped give rise to the age of hybrid viticulture that lasted a century in the United States. His wine making, oriented toward the taste and mouth-feel of the wines of his native land, were an aesthetic precondition to the twentieth-century turn to French *Vitis vinifera*. His cultivation practices had been shaped by the classic notion of *terroir*, the suitability of certain grapes to certain soils in specific climates. He attempted the acculturation of European varieties; when these proved unsuitable, he concentrated on those hybrid grapes that proved viable year after year because of their resistance to the specific challenges posed by a place. Discovering such grapes had been the great labor of the

generation of experimentalists, whether in hardy foreign imports, in native species, or in crosses between the two.

John Adlum's favorite grape had been the Catawba (*Vitis labrusca* var. *Catawba*), a lilac-purple grape of ample size that he discovered in the garden of Mrs. Schell in Montgomery County, Maryland, yet bearing the name of the river that flows from the mountains of North Carolina into the Wateree River in South Carolina. It can produce wine racy of the wild woods, particularly if one makes a red wine of it; despite its sylvan pungency, it formed the basis of the first American hit wine beverage, Nicholas Longworth's "Sparkling Catawba." The effervescence and woodsy tang became a favorite taste of the common wine drinker of the mid-nineteenth century.

John James Dufour's favorite grape—one that he and his associates grew almost to exclusion during the first decades of the nineteenth century—became generally known as the "Alexander" (*Vitis labrusca* var. *Alexander*), though Herbemont secured it as "Schuylkill Muscadel." A native of the area around Philadelphia, this sweet, black grape had been collected and cultivated by the gardener of the Penn family, a "Mr. Alexander," and included in the thwarted national vineyard begun by Peter Legaux at Spring Mill outside Philadelphia, whence both Adlum and Dufour secured their stock.[36]

Adlum used the grape to make a fortified wine. Dufour tried to build a commercial empire on it but discovered that its taste did not compare favorably with the increasingly available American wines produced from the Isabella, Herbemont's Madeira, and Bland's Madeira grapes. Indeed, too much of his landmark volume, *The Vine-dresser's Guide*, defended the quality of the vintages he had made. Since the book appeared after he was actively engaged in wine production, it operated as a justification of his career. Dufour's chief liability as a winemaker had been his disinclination to work with a broad range of varieties. His chapter on grape varieties reproduced an English plant breeder's descriptions and neglected the grapes native to or acclimatized to America. Because Dufour pursued commercial gain over scientific knowledge, he limited his curiosity to those aspects of the vintner's art that could maximize the success of his specialized operations. His attitude differed markedly from that of Herbemont and Prince. Nonetheless, Dufour's practical focus and experience inspired Herbemont's unstinting respect.

When we return attention to Herbemont's list of grapes, the first thing we note is the total absence of the Catawba and Alexander grapes in the donation. He grew both varieties and made wine from them, but reckoned the wines cruder in taste than those made from other varieties. We will consider the list in reverse order, beginning with Herbemont's Madeira (*Vitis aestivalis borquiniana* var. *Herbemont*) a large, brown, slow-growing grape free of the foxy qualities (particularly when made in a white wine) that many objected to in wines from the Catawba or Alexander grapes. A complex cross between a native *Vitis aestivalis*, a *cinarea*, and

one of the multitudes of vinifera vines shipped into colonial Georgia to stock the Trustees' Garden in Savannah, Herbemont's Madeira came into cultivation toward the end of the eighteenth century. Georgians called it the Warren or Warrenton Grape, and General Thomas McCall cultivated it extensively after 1816 in Laurens County, Georgia.[37] Herbemont found it growing in Columbia when he arrived and cultivated it immediately. His vociferous promotion of "the Madeira" for its hardiness in warm climates, its excellent balance of sugar and acid on the tongue, and its flavorful wine led to its being designated after him to distinguish it from "Bland's Madeira."[38]

Lenoir, a closely related form of the *aestivalis borquiniana* grape, rivaled the Madeira in Herbemont's esteem, for it ripened early in the season, boasted a rich supply of sugar, resisted rot, and produced a wine in color and mouth-feel almost like a Pinot Noir.[39] Named after Isaac Lenoir of Horatio, South Carolina, who grew the parent vine from seed, the grape came into Herbemont's hands early. The berries were relatively small, though handsome, and the vines far from prolific in bearing fruit. Because of its resistance to Pierce's disease, the grape became a staple of Texas viticulture at the end of the nineteenth century, albeit cultivated under the names "Black Spanish" or "Jacquez."[40]

The Arena grape was a native variety found in the Carolina sand hills and brought into cultivation by Herbemont. William Robert Prince reported, "It makes a very excellent red wine, which is thought by Mr. Herbemont to be the very first in rank among American wines made of native grapes. It improves greatly by age, and when sixteen months old has been much approved by amateurs; at an exhibition of wines at the South Carolina Agricultural Society, it received their encomiums and was pronounced a very superior wine."[41] Despite the praise, the variety proved difficult to grow and never became a fixture in southern vineyards.

The next listed variety, the Isabella, did, however. Named after Isabella Gibbs, wife of farmer/botanist George Gibbs of Brooklyn and St. Augustine, the grape (*Vitis labrusca* var. *Isabella*) was native to the Carolinas but entered general cultivation through the efforts of northern growers. A single vine, planted by Gibbs in 1816 in Brooklyn Heights, produced numerous progeny; cuttings were shipped to France and the island of Madeira (where it is still grown to make wine for local consumption), and it enjoyed extraordinary popularity in northern vineyards.[42] Extraordinarily profuse in setting fruit, so hardy that it required little maintenance in cold or hot climates, and resistant to disease, it became the reliable table grape in antebellum America and the basis of a sturdy red wine. Herbemont particularly favored the Isabella and Herbemont rootstocks for grafting. Of the other grapes mentioned, the White Malaga Malmsy, the White Olivette, Burgundy Miller, and White Melier were European, the Malmsey being the most suitable for wine. The Long's Arkansas, secured during the 1820 exploratory expedition into the western territories by Major Stephen H. Long with a crew of naturalists (Thomas Say,

Titian Peale, and Dr. Edwin Jones), was so new in cultivation that it served more as a novelty than a viable variety for the vineyard.

One notes the complete absence of Muscadine grapes, those most characteristic of southern grapes, from whose round, juicy fruit many a planter sought to create sweet, musky wine. Herbemont believed the *Vitis rotundifolia* family of grapes problematic for wine making since the berries do not grow in clusters and ripen at variable times.

What do we learn from these grapes and the descriptions of Herbemont's employment of them? Though he championed the use of native and hybrid varieties for planting, table, and wine making, his ideal of how wine should taste derived entirely from his experience of French models. His favorite grape may have been called "Madeira," but he had little use for the developing Madeira style of wine making with its heating of the must and fortification of the wine by brandy. In this he defied the prevailing taste of his place and time. No wines enjoyed higher regard among the drinkers of the South than the extraordinarily heat-tolerant fortified productions of the Portuguese island. William Grayson recorded an instance when this predilection prompted some local planters to regard a Herbemont vintage as insufficiently rich for their tastes.[43] Yet Herbemont remained true to his palate. His was the middle way between the foxy funk of the Alexander and the alcohol kick of would-be Madeira, the two paths that his contemporary winemakers followed most doggedly. His Franco-American path prefigured the taste of the future.

His example inspired a network of contemporary viticulturists in Carolina and Georgia, including Thomas Spalding, Dr. John Davis, Abraham Geiger, Thomas McCall, and William Ellison, all major contributors to the improvement of vineyard management in the South. His eminence was also recognized continentally. In 1837 landscape architect and horticulturist A. J. Downing of New York hailed him as one of the trinity of great American winemakers: "The late Major Adlum, of the District of Columbia, Mr. Herbemont, of South-Carolina, and Mr. Longworth of Ohio, have been the most successful cultivators of our native grapes, on a large scale, in the Union. Their wines have been pronounced, by connoisseurs, equal to some of the most celebrated foreign productions, and their success in the field culture of the grape has been such as to remove all doubts of the entire feasibility and profit of wine-making among us."[44]

The "us" that closed Downing's encomium is important. Trained in a view of science that saw the creation of knowledge as a collaborative enterprise, Herbemont shared his findings in private correspondence, shared his cultivars in a wide network of plant exchange, and shared his understanding in publications that invited and received critique and emendation. While he sought the expansion of wine making from an amateur pastime of elite planters to a commercial enterprise of a community of vignerons, he did not view his writings as vehicles of his own enrichment to be sold to promote his vintages. His letters to the *American Farmer*,

the *Southern Agriculturist*, and the *Farmers' Register* were pro bono communications, supplying to interested readers the wealth of his experience for a subscription cost that supported the journals, not the authors. When the *American Farmer* issued a stand-alone version of his 1833 rumination, *On the Culture of the Vine, and on Wine Making in the United States,* it shipped the booklet free of charge to any requestor who would cover postage. In contrast, John Adlum's involvement in print created a separate revenue stream for his farming. His second imprint, *Adlum on Wine,* approximated a sales catalog listing vine cuttings that the public might purchase. Herbemont's involvement in the marketplace was far different. He sold wine and cuttings to the public, but he was far more interested in the informal barter world among agriculturists and botanists, exchanging wine for plants and agricultural productions of other growers. He gave away gallons every year to his circle of confreres. They in turn would send him anything new that came their way. His monetary return from his vineyards never approximated the calculated profits he repeatedly projected in writings as temptation to readers to undertake their creation. No matter: he loved the role of genteel experimentalist and agricultural projector too deeply to assume that of commercial producer.

Herbemont's Agrarian Philosophy

Herbemont's cherished project was to transform the countryside and society in which he lived. The middle region of South Carolina, with its pine barrens and sand hills, were wastelands sparsely occupied by an "inefficient" population of subsistence farmers. He wished it to be a productive place thickly populated by skilled immigrant farmers cultivating olive groves, vineyards, and mulberry orchards to feed silk worms. He realized that this vision of agriculture stood at odds with the habitual practice of planting in South Carolina conducted on the coastal plain—large-scale cultivation of staples such as rice or cotton using African American slave labor. Yet he believed that continuing the slave regime, exhausting the soil by intensive cotton farming, and submitting to the political schemes of the northern manufacturers would doom the old way of doing things. He first published his vision of a new agricultural order in 1822 in the wake of the Denmark Vesey conspiracy in Charleston and reproclaimed it repeatedly from 1827 to 1829 during the political agitations over the imposition of the 1828 "Tariff of Abominations."[45] This cultural crisis, he assumed, would force even the most unthinking adherents of the old way to reconsider the structure of the agricultural system and move the South Carolina legislature to action to bring about, at very least, the renovation of the midlands.

Wine making in antebellum South Carolina had political consequences. Herbemont spelled these out beginning with *Observations on the Late Occurrences in*

Charleston by a Member of the Board of Public Works of the State of South-Carolina (1822), a pamphlet that argued against chattel slavery as an agricultural labor system and argued for diversification of crops in South Carolina. Composed in the wake of the discovery of the plot by Denmark Vesey and Gullah Jack to murder the Charleston plantocracy and seize a ship to sail African American slaves to St. Domingue, *Observations* exploited fears that had lurked in the white imagination since the Haitian Revolution. Herbemont's entry into South Carolina's social and intellectual world had been his translation of Dubroca's *The Life of Toussaint Loverture, Late General in Chief and Governor of the Island of Saint Domingo* (1802), and his understanding of the dangers of the slave system arose from his peculiarly French take on the black liberation of Haiti. Because the revolutionists there had defeated Napoleon's army regulars, Herbemont did not doubt the intellectual and physical capacities of Africans. One finds none of the racial-hierarchy ideology that pervaded Jefferson's writings. African Americans were "inefficient" in their labors only because economies based on coercion and forcible restraint provide no incentive to work productively, unlike systems based on rewards. Under slavery there was only "[a]pathy, indolence, and want of energy and industry" in the activity of both slaves and masters (1838). This did not, however, mean that Herbemont embraced the wage labor system of an emerging capitalism. Indeed, he believed that for the poor of Europe, the conditions of labor and of life were fundamentally even crueler than that on a humanely run paternalist plantation; the slave was "never in danger of seeing the constable seize his bed for house rent."

Herbemont was a post-Enlightenment thinker who viewed slavery as a "hereditary disease" of the political economy of the South—potentially dangerous, maybe even fatal to those who depended on it. For philanthropic and humanitarian reasons, he desired its abolition. Since it did exist, and since its victims must necessarily harbor resentment for their bondage, simple manumission posed a problem. The more freedom was permitted to slaves and ex-slaves, the greater their opportunity to collaborate to enact retribution on their former enslavers. The message of Haiti was clear on this point: ex-slaves, given the opportunity to seize the property their labor had developed and the power that they had been denied, would retaliate violently. The larger the population of Africans and the smaller the population of the white plantocracy, the greater the likelihood of this violent conclusion.

Hence, Herbemont wished the deportation of all freed former slaves from the state, "if it should ever be thought adviseable to suppress slavery entirely and send away the emancipated blacks to where they might be independent and happy" ("On the Moral Discipline of Slaves," 1838). Until that day, the likelihood of violence could be decreased only by increasing the white population of the state and keeping the enslaved population illiterate, for knowledge about what had happened in Haiti would be to possess the blueprint of rebellion. The prospect of

field workers passing around copies of *The Life of Toussaint Lovertoure* must have chilled Herbemont's blood. He did not doubt a literate, "intelligent and industrious" African American's ability to draw analogies and conclusions from that text.

While the Denmark Vesey affair afforded an opportunity to advance his vision of a new agricultural order, his preface made clear that his scheme for transformation of the midlands had long been germinating for other reasons. Herbemont objected to the exploitative use of the soil by cotton planting and the improvidence of an agriculture focused on the production of one or two staple crops. Yet South Carolina's response to the prospect of revolt was not to face the problem of slave-based agriculture but to institute a more rigorous disciplinary scheme, creating military academies to train planters' sons in the arts of arms needed to quell uprisings. Herbemont's pamphlet was thus consigned to the bookshelf.

Then, in short order, a second crisis arose that nearly forced the South Carolina establishment to engage the problems of their cotton culture. The U.S. Congress's passage of the Tariff Act of 1828—called by southerners "The Tariff of Abominations"—nearly persuaded Carolina's planters to go into grapes. Northern legislators had pushed through a protective excise tax on manufactured goods (English cloth goods were particularly targeted) in order to give a protective advantage to the region's manufactures. Since southern cotton supplied the English trade, the tariff imposed so high a duty on the foreign purchase and export of American cotton that it killed English demand. The price of cotton fell—too low to insure Carolinians a profit but not low enough to reignite English demand.[46] The agricultural economy of Carolina tottered.

In the months of ramp-up to the passage of the tariff, fear for the future grew so great that the S. C. Agricultural Society, which had operated a good eight years without a print organ of information, felt compelled to join forces with other agricultural associations to form the "United Agricultural Society of South Carolina" and begin a campaign of publication projecting a new agricultural and economic order in the state and region, an order not bound so firmly to cotton. Edited by J. L. Legaré of Charleston, the *Southern Agriculturist* commenced in 1828 with Herbemont's "An Essay on the Culture of the Grape Vine" as lead article of volume 1, issue 1.

During the Congressional debates over the tariff in 1826 and 1827, Herbemont had recognized the agricultural consequences of passage of the excise tax and proposed a course of action that would forestall disaster. He dispatched a memorial to the South Carolina legislature in late 1826, petitioning the state to bankroll the development of the pine lands of middle Carolina into a wine region. As an experienced member of the state's Board of Public Works, he reckoned the legislature would like his proposal that grants of state land be made to winemakers from France, Italy, Germany, and Switzerland. He reckoned such benefactions would be

regarded by lawmakers in the same light as other major enterprises—the construction of a canal or public roads. It was not to be. Whitemarsh B. Seabrook, cotton planter, agronomist, and chair of the Senate's Committee on Agriculture, replied with the most flattering refusal that southern eloquence could fashion. It deserves extensive quotation.

> The subject to which the memorialist has invited the attention of the Legislature, is one of the most important and interesting. The depreciation in the value of cotton, the improbability of any future amelioration in the price of that commodity, the admirable adaptation of an immense area of the lands of the State to the culture of the vine, the full and satisfactory experiments in reference to this new branch of industry, all concur to favour the belief that the period has arrived when the competent authorities should inquire, whether our agricultural products shall continue to descend in the scale of value, or whether it is not expedient to divert, by legislative bounty, a portion of the capital now engaged in unprofitable labour, and direct it where it can be more advantageously employed? . . .
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> The public attention has been literally forced to this subject of general interest by the unwearied perseverance, untiring industry, and botanical research of the memorialist. In the furtherance of his views, he visited France a few years ago; at a very considerable expense; and on his return he presented to his adopted country, two hundred and sixty-four varieties of the vine, as a testimonial of gratitude for the political blessings he enjoyed. Since that period he has laboured zealously in his vocation, and from present indications, South-Carolina will yet have ample cause to rank the memorialist among her distinguished benefactors. Impressed with this conviction, the Committee cannot restrain the expression of their regret, that the present financial condition of the State will deter them from recommending, at this session, any appropriation in aid of the highly commendable and benevolent scheme of the memorialist. They, therefore, beg leave to submit the following resolution, to wit:
>
> RESOLVED, That it is expedient to encourage the cultivation of the vine in this State, but that the condition of the Treasury will not authorize the appropriate of money for that purpose at this time. WHITEMARCH B. SEABROOK, Chairman[47]

What most surprises about Seabrook's "Report" is the candor with which it entertained the possibility that the cotton economy might be dying—that the established order might be on the verge of dissolution. Vice President John C. Calhoun's political solution to the Tariff Crisis—the campaign to "nullify" national legislation by state action—did not address the commercial problem: the depressed cotton prices from an increasingly weak demand for English cloth goods in the United States because tariffs had exalted their prices. No one in 1828 could foresee recalcitrant Yankees backing down in their quest to protect their clothing market. They seemed too hungry for tax proceeds, wishing to apply the benefits to roads and other internal improvements; but Calhoun's rumblings about the dissolution

of the Union and the ferocity of public anger in the slave states (a ferocity that made persons forget the rights of their individual states and conceive of a South) frightened northern congressmen into a partial rollback of the tariff in 1833.

In 1828, however, no ready repair to the cotton economy seemed available, so even cotton planters began looking beyond cotton, rice, and corn for cash crops. William Ellison of Fairview Plantation expressed the sentiment of the moment when he observed, "The decline of that article [cotton], will I hope be productive of the good effect of weaning us from it and compelling us to resort to something else as an object of culture, which may be less engrossing and less destructive to our lands."[48] A South Carolinian planter with a statistical bent, Seabrook grasped several odd facts about his state's agriculture—that it had the smallest landed capital of any state in the Union, with only about one-tenth of its 16 million acres under cultivation. Only 1.3 million acres grew commodities or pastured animals. Grape growing had a potential to develop 5 million acres that were otherwise "destined to perpetual sterility." Furthermore, grape production would tremendously revalue sandhills land—worth only ten cents to five dollars an acre in the 1828 market—since by Herbemont's calculations, an acre in vines could generate six-hundred-dollars profit annually.[49]

Sadly, Herbemont's numbers may have killed his proposal. Seabrook and other leaders on the Agricultural Committee were cotton planters, a group that won riches by investing privately in the commodity when a method of growing and processing cotton became available late in the eighteenth century. These planters had an entrepreneurial suspicion of governmental manipulation of the economy. The 1828 crisis in cotton had been provoked by U.S. governmental action—the institution of the tariff. Herbemont, J. D. Legaré, and nearly every contributor to the *Southern Agriculturist* were anti-tariff free-traders. Yet they couldn't fully grasp why a governmentally supported, privileged, and protected enterprise would contradict their stated political credo. If Herbemont's profit projections were credible, then reasonable planters should have gravitated to wine cultivation as a matter of course, particularly given the sinking fortunes of cotton. What Legaré understood, but Herbemont failed to see, was that the cotton planters, both the old island planters and the up-country cotton men, might not object to governmental intervention in the economy if it were to create a weaving manufactory in the state, putting it in direct competition with New England mills. Legaré strongly suspected the motives of the cotton interests, though certain of its brightest lights contributed regularly to the columns of the *Southern Agriculturist*. He made the *Southern Agriculturist*'s editorial policy strongly pro-agriculture and anti-industrial, attacking whatever ambitions toward mill development might have been lurking in the cotton planters' imaginations.[50] Herbemont was too good natured to suspect Seabrook and his ilk of harboring a hidden agenda. He thought the senate action shortsighted, and accountable primarily from the legislators' failure to grasp

that wine making differed from cotton planting in that it required enormous skill and experience to prosecute successfully. Entrepreneurial spirit alone could not render vines productive. So, he resolved to educate the planters and legislators of South Carolina further, in his 1829 "Address to the Agricultural Society of South Carolina."

The address renovated his 1822 plan for the reorganization of South Carolina agriculture. It exploited the tariff crisis to propose another way of doing things in which farmers—"agricultors" who supplied necessities required for the self-sufficiency of a community—had equal standing with planters—those who secure wealth through the cultivation of luxury commodities. It imagined a world in which rice and cotton did not dominate but wine, cattle, and vegetables secured enduring wealth. Herbemont indicated that manure was the key to the transformation of Carolina's economy. He played upon resentment of New Englanders by suggesting that importation of hay from the north was a kind of servile stupidity, avoidable because locally grown crabgrass or crow-foot grass could forage cattle just as well. Cattle were the key. They provided the manure that could enrich to fertility the vast expanses of unexploited land.

Herbemont intuited that the states' rights political philosophy being forged by Calhoun and other anti-tariff partisans appealed to a constellation of powerful images. The idea of an entirely self-sufficient community stood foremost. South Carolina did not produce much of the food it needed. It depended on trading its cotton, rice, and indigo for what it required. Herbemont envisioned a community in which livestock, wine, vegetables, and other staples had equal force in sustaining an independent state. It would not need, but could still benefit greatly from, trade.

Herbemont's speech laid out the structure of a new political economy, but his disquiet at the problems posed by cotton culture in terms of its destructive exploitation of the land and its dependence on slave labor caused him to take up his pen again and write an even more ruminative piece, a philosophical consideration of the best way to live on the land. He titled the essay "Honesty Is the Best Policy," using the old maxim as a familiar idea through which to enter a discussion about agrarian ethics. He began by redefining honesty into something vastly more potent than its common usage: "I understand the word honesty to include almost all the other virtues, such as truth, justice, prudence, industry, economy, love to our fellow men, and I think I may include a due regard for the brute creation, and even for the vegetable world." Under a homespun term, Herbemont built an argument for individual authenticity, communal care, and environmental stewardship. He envisioned rural life consisting of signal moments requiring honesty—the selection of a place to live and work, the decision to "deal honestly with the land" by nourishing rather than exploiting it, the resolve to improve one's knowledge and situation, the determination to use laborers, particularly slaves, humanely. "Our labourers ought to be treated with gentleness, and I was going to say with liberal-

ity; but, no, I must say, with justice. Since we deprive them of their liberty, and force them to exert their strength in our service, it is but common honesty towards them that we feed them well, and in every respect do every thing for them that may tend, not merely to their health; but also to their comforts and well being. In this it is most evident that 'honesty' is the best policy. The man that ill uses and starves the poor slave that toils for him, is unworthy his station among men; he is below his victim."[51]

Herbemont rebuked the penny-pinching, Snopesean exploitation of black bodies by planters for whom the dollar stood as an idol. Toward the end of his life, convinced his fellow citizens would never dismantle slavery, Herbemont composed a report for the Society for the Advancement of Education at Columbia, "On the Moral Discipline and Treatment of Slaves." It advised that masters palliate the conditions of bound people. It aimed not so much at the brutal exploiters he chided in "Honesty Is the best Policy" but at a new creature on the southern scene, the pious planter. Certain slaveholders had become evangelical Christians who directed that the time available to African Americans away from work be filled with religious instruction. Herbemont suspected that the religious meetings of the slaves were charades in which piety masked mischief. Using the testimony of an unnamed planter as evidence, Herbemont sketched a scheme of hypocrisy he believed had been put into play. "He attended several of their meetings, and from their most absurd perversions of the scriptures, and the monstrous absurdities which they uttered, with the most sanctimonious countenance, he was most fully satisfied that no morality could proceed from these meetings. He afterwards found that they committed depredations of all kinds, killing beeves, hogs and sheep, thrashing his rice in the woods, breaking corn and grubbing his potatoes. He ascertained by the fullest and clearest proofs, that the coloured preachers were the greatest and most active thieves."[52]

This exemplary planter devised a remedy: restricting religious worship to Sunday morning and, in place of weekday gatherings for preaching and praying, "fed and clothed them well, and induced them to occasional meetings for the purpose of merriment. He had fiddles and drums for their use, promoted dancing, and he found that by punishing certainly, though moderately, all ascertained delinquencies, they became much better tempered, and certainly much more honest." Turning from this testimony to his own philosophy, Herbemont observed that happiness and love are the end of all human desire and the wellspring of human activity: "Innocent amusement," opportunities for play and conversation, music, merriment lead one to happiness; "Cheerfulness is the fruitful parent of charity and good feelings towards our neighbours, as moroseness, the first born of fanaticism, is that of hatred and malice, and all uncharitableness."

Herbemont believed coerced laborers would never have the requisite devotion or care to perform the agriculture of the future. In contrast, the majority of his

neighbors, whether cotton or rice growers, viewed well-managed slave labor as the most efficient system for producing staple crops. While the Haitian Revolution had alerted this population to the violent potentialities of repressing enslaved African Americans too despotically, it had produced a near universal conviction that the substantial African American population residing in Carolina should never be liberated lest it be free to seize political control. Consequently, agriculture had to continue to employ the resident population of African American laborers. In the last years of Herbemont's life, when the Nullification Crisis calcified into a defiant conviction that slavery was the sine qua non of southern life, public opinion grew more critical of Herbemont's schemes for the importation of Swiss or French Protestant refugees.

Visions are not in the end tidy things. When they impinge upon the interests of established political structures, they complicate. Herbemont's deepest image of the desirable life had a strong classical coloring. He wished a Horatian rural world of achieved civility—a stable *habitus* where neighbors live together for generations, finding enduring happiness in mutual revelry, conversation, and edification. In his meditation "On Emigration to the Western Country," he confessed his ideal: "I . . . prefer the endearments of a long established home, the cordial intercourse between neighbours who know, esteem and love one another. The very sight of the spots, where we have spent the happy days of our childhood, a ramble through the woods where we made our first trials with our fowling piece, of the brook and pond where we used to bathe, and exulted in our prowess in catching the first minnow . . . produce more innocent contentment and pleasure, than the hoarding of a large sum of money until we can so dispose of it as to produce more money." The wholehearted pursuit of money, the hunt for the quick dollar in the new cotton lands of Alabama and Mississippi by the aspiring men of Carolina seemed to Herbemont a wrongheaded idolatry. "I admit . . . that cotton and money are two very good and convenient things; but I deny most positively, that they are the only good things attainable in this world. A little less money and more happiness, comfort and ease are to my taste much more preferable to little or none of the latter, to a most copious abundance of the former." He understood all too well that many were moving because cotton farming had exhausted the fertility of lands throughout Carolina. The state produced less cotton and generated fewer dollars, while the new lands to the southwest promised more of both. He understood the full measure of the looming ecological disaster for the countryside if cotton culture continued on its same plan, a crisis that he likened to the devastations that befell the Campania di Romana. Those fields that once supported the world's greatest city had declined into "Infectious marshes, where nothing but desolation, misery and death can abide." To those who accused him of scare-mongering, he asked, "Where are now the elegant abodes of hospitality, those palaces that, not many

years since adorned the avenues to the good city of Charleston for many miles? There is scarcely any thing left of them except the magnificent lines of live oaks that led to them." He desired the men to stay, to restore the land with marl and manure, to plant other crops besides cotton, and to nourish a neighborhood instead of seeking private wealth.

Next to grapes, manure occupied Herbemont's imagination. It was a symbol as well as an instrument, for it betokened the farmer's care for the land, his love of his progeny, and his faith in the future of his society. The careful restoration of the fertility of the soil through manure, crop rotation, and letting fields go fallow was the key to an enduring, multigenerational agrarian culture, just as a purely extractive mentality was the key to the degradation and depopulation of the state, the destruction of neighborhoods, and the ruin of the land. So Herbemont wrote repeatedly about all the manures—green manures, such as Chickasaw peas, animal manures, such as cow dung, and mineral manures, such as marl. When Edmund Ruffin published his "Essay on Calcareous Manures" and engineered the renovation of Virginia's tobacco-ravaged landscape with lime in the 1830s, Herbemont became his chief advocate in South Carolina. He advised the mining of the fossil beds and shell mounds of the Lowcountry, a recommendation that farmers embraced, but in their case only to restore cotton farming, not to diversify agriculture. Locally, his success as an advocate for soil replenishment through manure outstripped his success as a champion of grape culture. John H. Hammond absorbed the message and, six years after Herbemont's death, invited Ruffin to relocate from Virginia. Ruffin came to South Carolina, where he created two model plantations at Red Cliff and Silver Bluff. Neither grew grapes.

We cannot ignore the political ironies involved in having Ruffin and Hammond culminate the effort to replenish South Carolina's soil and institute a scheme of sustainable agriculture. They, too, cherished the idea of a traditional multigenerational agrarian order, yet not a diversified agricultural society with a substantial class of immigrant farmers devoted to moderation, happiness, pleasure, and humanity but an enduring white planter aristocracy, supported by slave labor, merely renovated by agricultural science, crop rotation, and a little crop diversification.[53] Both Ruffin and Hammond were among the most flammable of the fire-eaters who espoused southern nationalism. Their political passion in the end devoured their scientific reason.

In a candid moment, moved by the frustration of wrestling with those powers in his state that desired to keep intact as much of the status quo as possible, Herbemont wrote, "If it be thought that we have somewhat traveled through some of the regions of Utopia, it will be readily admitted." Yet it was an attractive utopia—a green place, forever replenishing itself, convivial and modest, graced with hospitality and refreshed with wine.

In the twenty-first century it may be difficult to imagine South Carolina as a cradle of American viticulture, yet it was. Consumption drove this excellence. As "Bacchus" so aptly observed in 1835, "Carolina has long been famous for the extraordinary excellence of her wine, we do not mean that produced by her vineyards, but that produced at her luxurious tables."[54] Herbemont dealt with a community possessing as refined a palate as existed in America. He did not shirk the challenge, and he met no more critical audience. His friend and colleague Dr. John Davis, who with the planters of Carolina had tasted every great growth of France and Germany in the early nineteenth century, remarked, "The wines he has been making for the last ten years, have been over and over again pronounced by competent judges to be good wines: and although they are not equal to the finest, yet they are superior, and would command a higher price in the market than thousands of thousands of gallons that are annually imported."[55] By the finest, Davis meant Château Latour, Chateau Lafite, Chateau Margaux.

As an experimental botanist Herbemont was conscientious, systematic, and thorough. He had mastered the European and American literatures on grapes and defined his task as the testing of all the recognized varieties of grape, European or American, to determine their suitability and adaptability to American growing conditions. While he domesticated wild indigenous vines, he did not join in the effort to hybridize native and European grapes, as William Prince of New York did in the 1830s. Nor did he bother with experiments in hothouse cultivation of grapes—a preoccupation of northern horticulturists in the 1830s and 1840s.

John D. Legaré, as progressive an agriculturist as operated in the antebellum South, attempted to make a just assessment of Herbemont's contributions to the arts of cultivation in 1830. Its elaborateness conveys the peculiar way in which Herbemont provoked the imaginations of his colleagues:

> Should the culture of the grape and the making of wine ever become one of the permanent sources of revenue to this country, to no one will she be more indebted than to N. Herbemont, Esq. of this State—his persevering efforts to introduce the vine is deserving of all praise. Not discouraged by partial failures, or the luke-warmness of our citizens, he has progressed from year to year, not only in perfecting its culture and adapting it to our climate, but also in bringing this hitherto neglected subject into more favorable repute. And although he is not the first who has attempted the formation of a vineyard, yet as far as we are aware of, he is the first who has been successful in establishing one, and the very first who has succeeded in making wine. Many attempts were made to introduce the culture of foreign grapes into this and the neighbouring States, previous to this, with a view of establishing vineyards, for it was supposed that a country abounding with the wild grape, and whose temperature was so favourable to the growth of the vine, could not be otherwise than friendly

to the establishment of vineyards, and the projectors appeared to labour under the delusions, that they had only to introduce the most approved varieties from Europe to follow the practices recommended there, and to reap the rich reward of their enterprise. How great, then, must have been their mortification to find that those which were esteemed the most there, altogether worthless here, that notwithstanding their strict adherence to all the rules of the vignerons, they could not succeed in getting a crop from their vines; that not withstanding their severe pruning, the shoots would exceed all bounds, and that the fruit would rot. Most of these persons were mere adventurers, some of whom were under the necessity of seeking aid from our legislature. It was not therefore to be wondered at that they should soon be discouraged and abandon an enterprise in which they were not seconded by our citizens, and seek for remuneration for their labours in the culture of those staples which we then enjoyed and which so well repaid the cultivator. These attempts, and their subsequent abandonment, without being successful in a single instance, caused the subject to fall into disrepute, and he was deemed a visionary who thought of introducing the culture of the vine. . . .

Fortunately, for us at this period, Mr. Herbemont entered the lists. Well versed in all the authors who had treated on the vine, as well as the best, practices of many of the districts of France, he was peculiarly well fitted for the enterprise. But he had serious difficulties to contend with. He had experiments to make and prejudices to remove—his firmness and perseverance has enabled him to accomplish much, and although he has not been completely successful, yet having achieved so much, and being still unwearied in the pursuit, we have much to hope from him yet, and a few years more will in all probability enable him to triumph completely over those difficulties which have hitherto opposed his progress.[56]

In the eight more years allotted to him, Herbemont did indeed experiment further and enjoyed increasing control over the conditions of growth and wine processing. At the time of his death in 1839, only William Prince rivaled him as an experimental cultivator of grapes. No one in the United States rivaled his record for making sumptuous wines from a range of American and Franco-American grapes. He shared everything he knew about growing, harvesting, and processing grapes into wine with the reading public. The last surviving bottle of his vintage was consumed in 1915. The name of a grape alone has kept his memory alive. No statue, no street name, no district, and no vineyard name memorializes him. Perhaps this republication of his writings will bear witness to his influence in the world of agriculture and wine—an influence that was pervasive and overwhelmingly beneficial.

Notes

1. "American Wine," *American Farmer* 14, no. 30 (October 5, 1832), 233. In 1835 N. F. Cabell of Virginia held a tasting of Herbemont's wines with a connoisseur friend to ascertain the justice of Smith's praise. The verdict: "My natural taste concurred with his more cultivated, in pronouncing it the best specimen of American wine we had ever seen." N. F. Cabell, "Trial of Mr. Herbemont's Wine," *Farmers' Register* 2, no. 10 (February 1835), 648.

2. Historians of wine and of the culture of the early republic in general overvalue the influence of books on American thought and practice during the early nineteenth century. With the consolidation of the agricultural press in 1819 and its subsequent explosive growth, an agrarian readership formed that was much more keyed to periodical articles than to book-length tracts. The agricultural periodicals—including *American Farmer* (1819), *Plough Boy* (Albany, 1819), *Agricultural Register* (Boston, 1820), *Farmer's and Planter's Friend* (Philadelphia, 1821), *New England Farmer* (1822), *New Jersey and Pennsylvania Agricultural Monthly* (Camden, 1825), *Southern Agriculturist* (1828), *New York Farmer and Horticultural Repository* (1828), *Western Tiller* (Cincinnati, 1828), *Farmer's Reporter and United States Agriculturist* (Cincinnati, 1831), *Genesee Farmer* (1831), *Western Ploughboy* (1831), *Southern Planter and Family Lyceum* (Macon, 1832), *Farmers' Register* (1833), *Tennessee Farmer* (1834), *Cultivator* (Albany, 1834), and *Ohio Farmer* (1834)—engaged in extensive republication of one another's contents. John James Dufour's *The American Vinedresser's Guide* (1826), the most useful practical *book* on vine cultivation of the period, had a print run of approximately five hundred copies, of which Dufour retained two hundred at the time of his death. Albert Lowther Demaree in *The American Agricultural Press, 1819–1860* (New York: Columbia University Press, 1841) documents the ample extent of the readership of these imprints and their influence on agricultural practice. Herbemont's treatise "Wine Making" was reprinted in toto in the *Southern Agriculturist* and in the *Farmers' Register* (see the headnote to that selection in this volume).

3. Nicholas Herbemont, Letter, "Geo. Fitzhugh, Sept. 2, 1832," *American Farmer* 14, no. 30 (October 4, 1832), 233.

4. Herbemont's vineyard was located sufficiently far inland that it did not suffer greatly from Pierce's disease, a bacterial disease that made growing *vinefera* grapes virtually impossible in the Gulf Coast South and the Lowcountry. The affliction remains so troublesome that wine making with European varieties remains extraordinarily problematic in these areas.

5. Alden Spooner, *The Cultivation of American Grape Vines, and Making of Wine* (Brooklyn, 1846), 25–27.

6. He offered the following varieties for sale over the course of his career: Herbemont's Madeira in both white wine and antique Madeira styles, Lenoir as a red wine, Isabella as a red wine, Arena as a red wine, Bland's Madeira as a white wine, and Morrilon as a white wine. As early as 1814 he experimented with small batches of wine made from *Vitis vinifera* grapes. These were never offered for sale.

7. The agricultural reform program is admirably summarized in John D. Legaré's "Farewell Address of the Editor," *Southern Agriculturist* (December 1834), 659–64.

8. The first such society, organized in 1785 in Charleston, had expired from indifference early in the nineteenth century.

9. The following belonged to the network of literate grape growers and winemakers during the experimental age of American viticulture: John Adlum of Maryland; William Blackledge of North Carolina; Linnaeus Bolling of Virginia; George J. F. Clarke of St. Augustine; Robert B. Currey of Tennessee; Dr. John Davis of Columbia; Isaac Deniston of New York; Samuel Downer of Massachusetts; John James Dufour of Vevay, Indiana; Thomas Eichelberger of Pennsylvania; William Ellison of Beaufort, South Carolina; George Fitzhugh Jr. of Baltimore; Jacob B. Garber of Lancaster, Pennsylvania; Abraham Geiger of Lexington, South Carolina; L. Gex of Indiana; Col. George Gibbs of Long Island, New York; Jonathan Hunnewell of Massachusetts; Christian I. Hutter of Pennsylvania; William Kenrick of Newton, Massachusetts; Nicholas Longworth of Cincinnati; Gen. Thomas McCall of Laurens, Georgia; Dr. J. C. S. Monkur of Baltimore; Richard Hill Morris of Philadelphia; Dr. D. N. Norton of Richmond; Thomas S. Pleasants of Petersburg; S. W. Pomeroy; A. B. Spooner of New York; Edward Stabler of

Maryland; Joseph W. Torrey of Michigan; Sidney Weller of Halifax, North Carolina; Adrian Vandeveer of New York; John Willis of Oxford, Maryland; Robert I. Withers of Alabama.

10. Perhaps the most fundamental change that Herbemont's suasion enacted on Longworth's wine-making practice was the limitation of sugar in the must and the exclusion of the brandy that Longworth had been using to fortify his wines in the 1820s.

11. Ian R. Tyrrell, "Drink and Temperance in the Antebellum South: An Overview and Interpretation," *Journal of Southern History* 48, no. 4 (December 1988), 485–510.

12. Not included are his ruminations on ornamental grasses, newspaper letters on the treatment of such common farmyard problems as weevils and wheat rust, and several letters on the use of Chickasaw peas as manure.

13. Thomas Hariot, *A Briefe and True Report of the New Found Land of Virginia: Of the Commodities and of the Nature and Manners of the Naturall Inhabitants* [London, 1590].

14. This history of thwarted enterprise is chronicled in the first five chapters of Thomas Pinney, *A History of Wine in America: From the Beginnings to Prohibition* (Berkeley: University of California Press, 1989).

15. Black rot, whose Linnean name (*Guignardia bidwellii*) recognizes Herbemont's friend James Guignard, is a fungus that attacks *vinefera* grapes east of the American Rockies, desiccating the fruit and making it useless for wine production, causing lesions on the vine, and necrotic circular spots on leaves. Nuccia Ayres, Christine Wood, and Andrew Taylor, "Black Rot, *Guignardia bidwellii*," Department of Agriculture Factsheet: Note 167, July 2006. http://www.agric.wa.gov.au/pls/portal30/docs/folder/ikmp/pw/ph/dis/vit/fs2006_blackrot_neyres.pdf

16. Pinney, *A History of Wine in America*, 107–14. The misadventures of this enterprising Frenchman in setting up a national wine plantation at Mountjoye, Springmill, Pennsylvania form the most amusing episode in Pinney's useful chronicle.

17. John Hailman, *Thomas Jefferson on Wine* (Oxford, Miss.: University of Mississippi Press, 2006), 66–254.

18. We can think of modern agriculture encompassing three eras—the first period of customary agriculture prevailed generally until about 1810, with farmers and planters following traditional practices; the second period of experimental agriculture, fired by the critical spirit of natural philosophy, questioned and tested these traditional practices in light of local conditions in order to arrive at effective cultivation practices and a general understanding of growing process; and the third, or scientific, period of agriculture dominated from 1870 onward, characterized by the academic study of agriculture, the incorporation of chemical, biological, and horticultural knowledge into a systematic understanding of all aspects of plant reproduction, growth, and processing.

19. Published by a consortium of booksellers in New York, Boston, Philadelphia, Richmond, and Charleston, William Robert Prince's *A Treatise on the Vine; Embracing Its History from the Earliest Ages to the Present Day, with Descriptions of above Two Hundred Foreign, and Eighty American Varieties; Together with a Complete Dissertation on the Establishment, Culture, and Management of Vineyards* (New York: Swords et al., 1830), is particularly valuable for its systemization of American grape varieties within the Linnean scheme. Prince was aided by his father, William Prince, proprietor of the Linnean Botanic Gardens in New York.

20. John Adlum, *A Memoir on the Cultivation of the Vine in America, and the Best Mode of Making Wine* (Washington, D.C.: David & Force, 1823), because of its heavy reliance on English accounts of wine making, was most useful in its footnotes, in which "J. A." demurred from the text. Key pieces of advice: not to prune in summer (13), to use native rootstocks for grafting (23, though this advice may have been suggested by the 1820 report in *American Farmer* of Herbemont's experiment with grafting). The account of wine making is almost entirely derivative. John James Dufour's *The American Vinedresser's Guide: Being a Treatise on the Cultivation of the Vine and Process of Wine Making Adapted to the Soil and Climate of the United States* (1827; La Valsainte–Purdue University Press, 2003), is altogether a more original production, with instructive accounts of trenching as a method of soil preparation for vine planting (chapter 10) and cellaring, important because the facilities for storing wine were so deficient in the early nineteenth century. C. S. Rafinesque's *American Manual of the Grape Vines and*

Art of Making Wine (Philadelphia, 1830) is a curiosity in that its author was a botanist who never owned land, planted vines, or made wine. It is valuable for its description of native grapes, particularly western varieties, but suffered in comparison to William Robert Prince's *A Treatise on the Vine* published during the same year.

21. Mancozeb 75DF is the pesticide currently favored to counter black rot.

22. One could argue that Herbemont's practice of grafting scions on native rootstocks in the long run saved European *vinifera* culture. Beginning his experiments in 1819, Herbemont discovered that the Isabella and Herbemont rootstocks provided the best defense against infestation and disease. William Robert Prince's *Treatise on the Vine* popularized Herbemont's method. When phylloxera ravaged Europe later in the century, both Isabella and Herbemont rootstocks served as the basis for saving the vineyards through grafting.

23. A. W. Armistead of Massachusetts, another proponent of grafting, also began his experiments in 1819.

24. Nicholas Herbemont, Letter on the organization of the South Carolina Agricultural Society, January 7, 1819, *American Farmer* 1 (1820), 354.

25. Michael S. Saunders, *Families of the Vine: Seasons Among the Winemakers of Southwest France* (New York: HarperCollins, 2005), 6–7, relates the story of one family's preservation of its ancient strain of Malbec grapes by grafting them onto Herbemont rootstocks in 1885.

26. Ron S. Jackson, *Wine Science: Principles, Practice, Perception* (Elsevier, 2000), 26–27. G. Gale, "Saving the Vine from Phylloxera: A Never-ending Battle," *Wine: A Scientific Exploration*, ed. Merton Sander & Roger Pinder (CRC Press, 2003), 81–84.

27. Obituary, *Southern Agriculturist* 11, no. 11 (November 1839), 448.

28. Agnes Lynch Starrett, *Through One Hundred and Fifty Years: The University of Pittsburgh* (Pittsburgh: University of Pittsburgh Press, 1937), 30.

29. Widow of Bartlee Smythe (or Smith).

30. The board of the college requested the South Carolina legislature to fund a full-time professor of French in 1805. After approval was granted, Herbemont was elected lecturer on April 23, 1817. Howard Mumford Jones, *America and French Culture, 1750–1848* (Chapel Hill: University of North Carolina Press, 1927), 42.

31. The Herbemont Musk Cluster, a Noissette Rose, is his creation.

32. A previous organization, meeting in Charleston, bore the same name in the last years of the eighteenth century.

33. N. Herbemont, "Columbia, South Carolina, Jan. 7. 1819," Letter announcing the formation of the South Carolina Agricultural Society, *American Farmer* 1 (January 1820), 354–56. I have not been able to secure a copy of the 1820 broadside published by the *Columbia Telescope* announcing the formation of the society and listing its officers for the year.

34. Appointed to the Board of Public Works in 1820, Herbemont participated in planning all large-scale public projects in the state and favored the hiring of Robert Mills as public architect. John Morrill Bryan, *Robert Mills, America's First Architect* (Princeton: Princeton Architectural Press, 2001), 151.

35. "Grape Vines," *American Farmer* 11, no. 52 (March 12, 1830), 411–12.

36. Prince, *A Treatise on the Vine*, 173.

37. Thomas McCall, "Remarks on the Warrenton Grapevine, by Thomas McCall," *American Farmer* 14, no. 50 (February 22, 1833), 393.

38. Throughout the early part of the nineteenth century, the origin of the grape was hotly debated between a group that held it to be native and those who argued an Italian origin. It is now thought to be a hybrid grape. Its long growing season and sensitivity to cold restricted its cultivation. It is a pale red grape of oblate shape named after Theoderick Bland, the Virginian politician who found it on the eastern shore and popularized it through cuttings sent to William Bartram and Samuel Powel of Philadelphia.

39. Prince, *A Treatise on the Vine*, 139–40.

40. George Ray McEachern, "Pierce's Disease in Texas," *About the Vine,* Texas Agricultural Extension Service Newsletter, April 29, 1996. Web version: http://horticulture.tamu.edu/newsletters/vine/abv0596.html.

41. Prince, *A Treatise on the Vine*, 189.

42. Alden Spooner, "Isabella Grape Vine," *New York Cultivator* (June 1838). See also Prince, *A Treatise on the Vine*, 169–71. In September 1857 General J. G. Swift of Geneva, New York, gave what is probably the most accurate account of its introduction into general cultivation by a participant in the process: "The Isabella originated at Goose Creek, near Charleston, South Carolina, and is a hybrid of the native fox and the burgundy of the huguenots. Gov. Benjamin Smith of North Carolina brought the grapevine to Smith-ville in 1809, and Mrs. Isabella Gibbs took a cutting from Governor Smith's garden to Brooklyn Heights, Brooklyn, New York, in 1817. In 1819, I purchased the Gibbs place, on Brooklyn Heights, from George Gibbs Esq., who came from Bladen County, North Carolina. In 1820, from the first well-grown vine in my garden I gave cuttings to William Prince, of Flushing." *Hunt's Merchants Magazine and Commercial Review* 38 (January–June 1838), 374.

43. "Autobiography of William John Grayson," *South Carolina Historical Magazine* 69 (1949), 95. Cited in Pinney, *A History of Wine in America*, 152.

44. A. J. Downing, "Notes on the Cultivation of Vineyards in the United States," *Hovey's Magazine of Horticulture* (June 1837).

45. Whether or not the Denmark Vesey affair was an authentic instance of resistance to the slave regime or a paranoid conspiracy against free black enterprise is immaterial for our purposes. Herbemont, like the majority of the reading public of South Carolina, believed that a rising had been prevented and that the will to rebellion revealed in published testimonies of witnesses betokened a pathology similar to that which drove the Haitian Revolution. The current scholarly controversy about the meaning of the Vesey affair inaugurated by Michael P. Johnson, "Denmark Vesey and His Co-conspirators," *William & Mary Quarterly* 58, no. 4 (October 2001), has not resolved into a consensus.

46. Herbemont also blamed overproduction of the crop for the price deflation.

47. Whitemarsh B. Seabrook, "The Report of the Committee on Agriculture to the Senate," *Southern Agriculturist* 1, no. 1 (January 1828), 43–44.

48. William Ellison, "On the Cultivation of the Wild or Native Grape Vine," *Southern Agriculturist* 2, no. 1 (January 1829), 13.

49. "Four acres can be planted and attended by a single labourer, who would thus be able to earn the enormous annual profit of $2400; and this two from land which could at present be purchased for twenty-five cents an acre." "Miscellaneous Agricultural Items," *Southern Agriculturist* 1, no. 1 (January 1828), 43.

50. Charles G. Steffen, "In Search of the Good Overseer: The Failure of the Agricultural Reform Movement in Lowcountry South Carolina, 1821–1824," *The Journal of Southern History* 63, no. 4 (November 1997), 753–802, suggests that inertia and a procrustean traditionalism doomed Herbemont's proposals and the schemes of the reformers, but Steffen overstates the degree of resistance. Crop rotation, manuring, and the diversification of plantation productions all increased in the 1830s and 1840s.

51. "Honesty Is the Best Policy. Second Prize Essay, Rural Economy by N. Herbemont of Columbia, S. C.," *American Farmer* 41, no. 3 (March 30, 1832), 21–23. Herbemont composed the essay in 1830.

52. Nicholas Herbemont, "On the Moral Discipline and Treatment of Slaves," *Southern Agriculturist* 8, no. 2 (February 1836), 70–75.

53. See Jack Temple Kirby's introduction to Edmund Ruffin, *Nature's Management: Writings on Landscape and Reform, 1822–1859* (Athens: University of Georgia Press, 2006). The question of just how effective Ruffin's reforms were in the conduct of southern agriculture is treated in William M. Mathew, *Edmund Ruffin and the Crisis of Slavery in the Old South: The Failure of Agricultural Reform* (Athens: University of Georgia Press, 1988).

54. Bacchus, "On Improving Wine," *Southern Agriculturist* (December 1835), 629.

55. John Davis, "On the Culture of the Vine," *Southern Agriculturist* 4, no. 1 (January 1832), 2.

56. John D. Legaré, "Review," *Southern Agriculturist* 3, no. 9 (September 1830), 479–80.

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PART ONE

Maxims

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The Vine has been given to man that it may enliven his spirits, gladden his heart, produce cheerfulness and good fellowship in society, and enable him to support unavoidable afflictions, under which he would frequently sink in despair. *1828*

Where wine is most abundant, there is found most sobriety. *1828*

Tell me where happiness is to be found more frequently, than in a circle of neighbours, relatives and friends, with really sound, light and unadulterated wine circulating moderately amongst them. There the lively song is heard with pleasure, the innocent and witty repartee gives zest to conversation. There the old delight in relating the feats and prowess of their youth, and the young, with due respect for age, listen attentively, and determine to strive with all their might, even to exceed their sires in all their exercises of manhood. *1828*

Certain things may be true in France, that are untrue here. *1828*

The situation of a Vineyard, must be open, clear and airy. *1828*

When you have an abundance of good roots, you have always a top at command. *1828*

Are there any kind of grapes, which, converted into wine by themselves, will produce that which is of a very desirable quality? Most undoubtedly there are. *1828*

There is nothing to which cleanliness is more necessary, than in the process of gathering grapes, and making wine. *1828*

Wine is the fermented juice of the grape; any thing else, though it may be called by this name, is not wine, but only an adulteration or an imitation of it. *1833*

Really good and genuine wine is among the best of the numerous blessings that a kind providence has bestowed on man, to assist him in supporting the many vicissitudes to which he is exposed; and, without it, this would truly be "a valley of tears." *1833*

A taste for strong wines has, unfortunately for us, been produced, probably by the first importers of wines across the ocean, who, fearing lest it should not resist

the effect of so long a voyage, thought of securing it by adding to it a quantity of brandy; and a wine which is not strong enough, when drunk in a very moderate quantity, to produce something like an incipient state of intoxication, has been rejected as trash, and a decided preference given to such as had a powerful effect. *1833*

A good cellar—one calculated to keep light and delicate wines—ought to be so deep that no change of temperature is experienced in it throughout the year. It should also be rather dry than damp; for too much moisture is injurious to the casks. *1833*

If it be true (and of this there cannot be any doubt,) that a poor, light, sandy soil will produce not only good wine, but an abundance of it, what excuse can we, of the Southern states, have for suffering *millions of acres* of land to lie idle, despised and uncultivated? We pay every year large sums of money for wines and brandies brought from foreign countries, when we can make as good, and perhaps better at home, at a much cheaper rate. *1826*

As for the notion that some persons have taken up in this country, that there is no wine made in Europe without the addition of sugar, and some add brandy, it is undoubtedly an error; and I can venture to say, that sugar or brandy is never added to the must in France, except it be by experimentalists. 1826

We ought to remember that brandy is made of wine, and not wine of brandy. *1826*

It appears to me that the rational use of wine, is to make it a blessing and not a curse. We show much better our gratitude to a beneficent God, by using that kind gift of his for the very purposes for which it seems to have been intended, viz. to exhilarate our hearts, produce cheerfulness, the parent of health and good morals, and to invigorate debilitated constitutions. *1826*

Many plausible and fashionable arguments will be used, to show that governments ought not to meddle with things of this nature. To this I answer, that if the prosperity of nations and states be not the business of governments, I do not know what governments are instituted for. *1827*

The culture of the vine is an art which cannot be easily acquired from the mere analogy with other objects of cultivation; neither can it be learned, except by very few, by books alone. *1827*

If a person thinks he can just substitute vines to cotton, or corn, or tobacco, without having any practical knowledge of the culture the vine requires, he will find himself disappointed. *1828*

Why not be satisfied with any good wine, sui generis, which the country, soil and climate permit to make, and which, though different, may be of equal value, or perhaps superior to the imported ones? *1829*

I am so fully convinced of the influence of the soil on the Wine, that nothing but an experience longer than my future life will probably be, could possibly satisfy me of the contrary. *1829*

Any one who undertakes the cultivation of the vine on a large scale, must make up his mind to meet with frequent disappointments. *1830*

Notwithstanding the numerous European works on the cultivation of the grape, and some of those, by persons of the very highest merit in science and experience, if it be presumptuous, it may not be predicted with the less probability in the result, that the best treatises on this most interesting subject, may hereafter be the growth of our own free country, unshackled as it is by the habits and prejudices of past ages. *1830*

The culture of the vine is really a strange thing. It produces an excitement somewhat analogous to gaming, though I hope it is more innocent and useful. *1837*

I understand the word honesty to include almost all the other virtues, such as truth, justice, prudence, industry, economy, love to our fellow men, and I think I may include a due regard for the brute creation, and even for the vegetable world. Gratitude to the benevolent author of all, makes it a duty in us to hold in high estimation all his valuable gifts, which must necessarily prompt us to cultivate and improve them according to our utmost abilities and lights of reason, given to us for no other purpose than to serve as our guide in our search for happiness. *1832*

[Concerning slaves] These most useful auxiliaries to all our labours ought to be treated with gentleness, and I was going to say with liberality; but, no, I must say, with justice. Since we deprive them of their liberty, and force them to exert their strength in our service, it is but common honesty towards them that we feed them well, and in every respect do every thing for them that may tend, not merely to their health; but also to their comforts and well being. *1832*

If all men were enjoined to love one another and to contribute, as much as possible to the happiness of others; how much more is it the duty of men who hold such command over others, as we do our slaves. It is then indisputably our most imperious duty to treat and govern them with a view to their comfort and happiness, as is consistent with propriety, and the performance of their duties towards us. *1836*

An Essay on the Culture of the Grape Vine, and Making of Wine; Suited for the United States, and More Particularly for the Southern States.

January–July 1828

Composed during the autumn of 1827, Herbemont's summary treatment of vine culture and wine making drew upon eighteen years of experiment in cultivating wine and table grapes in the southern hill country of the United States. These experiments had concentrated his attention on six varieties of grape—all of them natives or native-French hybrids: Herbemont's Madeira, Lenoir, Red Muscat (Bland's Madeira), Isabella, Arena, and Muscadine. In 1828 he grew thirty-six varieties of *Vitis vinifera* grapes at Palmyra, yet none of these proved sufficiently productive or resistant to black rot, phylloxera, and Pierce's disease to warrant wine production. His palate judged the wine from Isabella and Muscadine grapes inferior to that produced from the Madeira, Lenoir, Red Muscat, and Arena. He made white wine from the Madeira and red from the three latter varieties. In both the cultivation of the grapes and the fermentation of the wine, he was conscious of the extent to which his experience showed that the optimum methods for success deviated from the instructions of European authorities. For Herbemont the most scientific European practice had been encapsulated in *Nouveau cours complet d'agriculture théorique et pratique, contenant la grande et la petite culture, l'économie rurale et domestique, la médecine vétérinaire, etc., ou Dictionnaire raisonné et universel d'Agriculture* (Paris: P. Deterville, 1809). This encyclopedic treatise composed by the members of the Section d'Agriculture de l'Institut de France included a treatment of grape culture by Louis-Augustin Guillaume Bosc d'Antic, who had served as a diplomat in the United States, knew personally of the botany of South Carolina, and had been instrumental in Herbemont's receiving grape cuttings from the national gardens in Paris in the autumn of 1820. Of American commentators on grape culture, only John James Dufour (whom Herbemont had befriended in Pennsylvania in the late 1790s) was regarded as reliable and quoted as authoritative on matters of training vines in trees, pressing grapes, and cellaring wine. Herbemont departed from Dufour's advice on many features of his method. Certain distinctive features of Herbemont's practice in trenching, pruning, and trellising

found systematic exposition here. The most historically important feature of his practice that did not appear—his grafting scions on native rootstocks—he detailed in certain "observations" in the *Southern Agriculturist* that he promised readers at the end of the essay. Unlike Herbemont's later treatise "Wine Making," his "Essay on the Culture of the Grape Vine" was not published independently in booklet form. Indeed, the restricted availability of the essay in the pages of the *Southern Agriculturist* was held out to the agricultural public as a reason to subscribe to the periodical. The essay appeared serially in *Southern Agriculturist* 1, no. 1–7 (January–July, 1828), 7–17, 49–57, 99–106, 145–51, 193–203, 241–49, 289–98.

"And Noah began to be an husbandman, and he planted a vineyard."
GENESIS C.IX. V.20

If it were necessary, at this period of the existence of man, to prove the utility and great importance of the cultivation of the vine, its antiquity would, perhaps, be sufficient for this purpose. It is mentioned in the Bible, this most ancient record of the transactions of man on this earth, and we believe it is the first article of culture specifically noticed after the deluge: "And Noah began to be an husbandman, and he planted a Vineyard." It is subsequently and frequently mentioned throughout the Sacred Writings, sometimes exhibiting the great goodness of God, at other times as being the very type of fruitfulness, of abundance, and of the best temporal gift to man by his Creator. That we are apt to abuse every thing given us for a blessing, is but too true, and the celebrated patriarch, here above cited, is a very notable instance of this, as he was the first to avail himself of the benefit, and to convert it to his shame. It is, however, no reason, that we must not use a good thing because it is sometimes abused, and it is very doubtful whether there is not more criminality in neglecting to avail ourselves of the benefits lavished upon us by a bountiful Providence, than to use them, even at the risk of doing so sometimes indiscreetly. We must exert our best endeavours to use and not abuse those valuable gifts. By doing this, we show our gratitude in the only manner possible for us. The Vine has been given to man that it may enliven his spirits, gladden his heart, produce cheerfulness and good fellowship in society, and enable him to support unavoidable afflictions, under which he would frequently sink in despair. If, in doing this, poor man accidentally exceeds the proper bounds, he ought, with sincerity and humility, acknowledge the weakness of his nature, try his best abilities to avoid the recurrence of the accident, which, if frequently repeated, may become an inveterate habit, and lead him to shame and ruin. We would ask of the timid advocates of perfect abstemiousness, whither the principles that actuates them would lead them? Is there any one thing which we may not, and do not often abuse? Shall we, therefore, cease to eat bread, because an excess of it has sometimes been found injurious? We must cease to drink water, because many may be drowned in it. What

merit has the secluded monk or hermit in not yielding to temptations that do not exist for him? *"A vaincre sans péril, on triomphe sans gloire."*[1]

Paradoxical as it may appear, it is nevertheless true, that where wine is most abundant, there is found most sobriety. There drunkenness is scarcely known, with all its long and dreadful train of evils. There cheerfulness, the dilation of the spirits is productive of all those good feelings in the breast of man, which keeps off from the circle of his social intercourse, all feuds, quarrels, envy, all the brutal passions of our nature, and that selfishness, productive of so many evils in society. Habitual cheerfulness produces kindness, benevolence, charity, forbearance, and to crown all, a happy and healthy long life. In short, exclude intoxication, and tell me where happiness is to be found more frequently, than in a circle of neighbours, relatives and friends, with really sound, light and unadulterated wine circulating moderately amongst them. There the lively song is heard with pleasure, the innocent and witty repartee gives zest to conversation. There the old delight in relating the feats and prowess of their youth, and the young, with due respect for age, listen attentively, and determine to strive with all their might, even to exceed their sires in all their exercises of manhood, and often exaggerated valour.

If all this be true, and what else but good could God have intended in giving to man such a boon, than to make it a blessing? Then, my friends, let us plant Vineyards as well as Noah. Let us avoid the excess he fell into. We have not the same excuse that he probably had; and it is very possible he may have been ignorant of the effect of drinking too much before he found it out to his cost and shame. But the cultivation of the Vine is an art which must be learned, before it can be followed with any degree of success. Attend then to the lessons I am preparing for your instruction in this most useful and pleasant business. Some of you will say, who are you that pretends to teach us! To this question, my answer is, that I am a man, I hope, full of good-will towards mankind in general, and particularly towards my fellow-citizens in this, my adopted country; that I was born in a country where the culture of the Vine is the principal object; and, that my greatest wish has always been to introduce it into the United States, and particularly into South-Carolina. To the attainment of this desired object, I have, for upwards of eighteen years, bent all my exertions. It has not been without very considerable expense, labour, time and perseverance, that I have finally, after many failures, succeeded in cultivating the Grape advantageously, and making good wine. The testimony of my friends, who are, perhaps, too partial, tends to encourage me in my long-continued exertions, and I am induced to impart, in this manner, what little knowledge I have acquired by extensive reading on this subject, by conversations with scientific men, but particularly by my experience.

1. "To win without risk is a triumph without glory" (Corneille).

If this be thought presumptuous in me, I beg leave to observe, that small as my acquirements are, they may be useful in this particular case, and I shall not be deterred by the acknowledged inferiority of my abilities, from attempting to do what I can. It must be remembered, that there is an old tradition, that the world is indebted for the advantage produced by the pruning of the Vine, to an ass, which accidentally got into a vineyard in the winter season, and cropped all the young branches he could get at to alleviate his hunger, until his master found him at this doably useful work, and gave him a beating (the frequent reward of benefits rendered.) The Vigneron, however, found, the following season, that all the vines which had thus been cropped, and which he thought were ruined, produced a greater abundance of better fruit than the remainder of his vineyard, which the ass had not been permitted to prune. He wisely took the hint, tried pruning, and derived great advantages from it.[2] So mind not how humble the teacher is, but profit by his lessons, so that he teaches that which is good.

The reader need not look for fine writing in this Essay. Even if the author was capable of it, this is not a subject where it ought to be expected; added to this, that he is a Frenchman writing English. The whole of his endeavours will be to treat his matter in a clear, plain, and intelligible manner, and if he succeeds in doing this, he will have done, as regards style, all that can or ought to be expected of the writer of a practical treatise on an Agricultural subject.—On such a subject, simple and clear language is much more likely to be productive of good, than if it was couched in language not generally in use among Farmers. The man of learning and science can easily understand what is within the comprehension of the plain labourer, but the latter cannot so easily make out the meaning of learned and scientific language.

There is, however, one part of this subject which the writer will enter on with great diffidence; and yet, here it is very probable he will be accused of very great presumption. It is, the instances wherein he may differ from authors who have treated on the same subject (which he does sometimes) and even from authors of first merit and celebrity. The only hope he has of any alleviation of any blame bestowed upon him, is, that on a subject of this nature, certain things may be true in France, that are untrue here. Most unwilling to give offence, or injure the feelings of any one in the smallest degree, where it can be avoided, the author will assert nothing positively, but what he knows to be positively true; and when circumstances may lead him into a belief of facts he cannot prove, or fully ascertain, he will say so. In short, he will faithfully and plainly state the result of his experience; and if he sometimes soars into the region of hypothesis, it will only be to endeavour, thereby, to find out the intention of nature, in the production of certain things;

2. Herbemont here recalls the legend of St. Martin, who became bishop of Tours in 371 c.e., who let his donkey roam the vineyards of the Loire Valley during his visits there. The donkey nibbled the vines and they became more productive the following year.

and how far a cultivator may be allowed to deviate from her evident objects; how her efforts may be aided by his skill; and lastly, where it is best to suffer her to perform her operations uninterrupted and unshackled. If, in doing this, his opinions should be found different from those of men, far his superiors in knowledge, he must beg to be allowed to have his own free opinions, when they are grounded on what he considers correct data, acknowledging at the same time his liability to error, as a man. He will, with great pleasure, acknowledge the sources from which he may have drawn information, otherwise than by experience; and he intends to draw very freely on the best authors within his reach. Having stated what is the practice in wine-countries, as far as he is acquainted with it, it is his intention to give an account of his various trials, with the practice he has finally adopted, and his reasons for doing so. This arrangement, it is presumed, will be useful to future beginners, who may thereby avoid the necessity of making very numerous experiments—which, in a subject of this nature, requires each, several years before the success or failure can be ascertained. In order the better to elucidate the difficulties inherent to this subject, and to consider it the more fully, it may be proper to examine into the causes that have heretofore caused the failure, and consequent abandonment, of the many attempts at the cultivation of the Vine in this country.

It is well known that many of the French emigrants to this country after the revocation of the edict of Nantz attempted it and failed. A Mr. Magget obtained a sum of money from our Legislature, some twenty-five years ago, for the promotion of this object.[3] He failed. It is true, I am told, that his sole object was to obtain the money. A very respectable inhabitant of Columbia, Mr. Benj. Waring, deceased, some years since, tried it without success.[4] Mr. Le Quino de Kerblay tried it in Edgefield,[5] and failed; besides many others, who had no better success. A question naturally arises here, why have they all failed, and why I, together with several others in Georgia, in North-Carolina, and elsewhere, have a very great prospect of succeeding, amounting almost to a perfect certainty? May not this country be now better suited for it than formerly, and may not the experiments have been made on land of too fertile a quality? I think these are among the true causes of so many failures. Let us remember the observation of Virgil, and it has been sanctioned by the experience of two thousand years, viz.: "Denique apertos—Bacchus mat colles." (The Vine delights in an airy, hilly country.)[6] In consequence of this, all writers recommend to avoid the vicinity of extensive forests, where the air does

3. Probably William Meggett, a substantial planter of Edisto, S.C.

4. Benjamin Waring, trustee of the Free School at Columbia, sometime member of the South Carolina government, and agriculturist, perfected a means of manufacturing cottonseed oil, and became a producer in 1802. He belonged to the first Agricultural Society of South Carolina organized toward the end of the eighteenth century.

5. Le Quino de Kerblay (1755–1815), Jacobin revolutionary from Sarszeau in Brittany who came to the United States in the 1790s. After his unsuccessful venture in Edgefield, he moved to Newport, R.I.

6. *Georgics*, book 2.

not circulate freely, and may come to the vines loaded with moisture, and probably other unfavorable matters. Although this country is still covered with forests, the extensive clearings that have taken place, must have produced a favourable change, which is continually progressing. Another cause, viz.: the too great richness of the soil formerly selected. Whether it is to be attributed to the freshness of the soil, or to the nature of our climate, or to both combined, it is very certain that foreigners would not, at first, make choice of such land as has been found to be most suitable here: for, although the Vine is cultivated in Europe, frequently, in soils of inferior fertility; it is seldom seen there in soils, apparently, so very poor, and still more seldom, without the application of heavy manuring; and, after all, their vines do not grow with a *vigour at all to be compared with that of ours*. This great vigour of our vines must have defeated all the efforts of Europeans in their attempts to train them as they had been accustomed to do in their native country. To this join the discouragement caused by the rotting of the Grapes, and the facility offered of doing better by the cultivation of such articles as were cultivated all around them, viz.: Corn, Indigo, Rice and Cotton. These must appear as sufficient to deter men from persevering in their experiments, when, at the same time, they could not probably afford so great a sacrifice of time as these experiments require; many years being necessary to ascertain the effect of a change of system. Yet it is very strange that some of them did not persevere; for nature seems to have pointed out to them that they must finally meet with success. *The country is every where covered with native Grapes*, of various and numerous kinds, intermingled with innumerable trees, shrubs, &c, &c. Wherever it has been attempted in similar latitudes, in other parts of the world, it has, I believe, invariably done well. It would then, be a most strange anomaly, that, with all the varieties of soil, climate, and native vines in our woods, the cultivation had not succeeded. These considerations induced me to persevere in my experiments, notwithstanding my repeated failures, and the advice and even sneers of my friends and others. I was so fortunately circumstanced as to be able, without risking my ruin, to go on and try every method I could think of, and after almost unremitted exertions and considerable expense, I have so far succeeded, as to extend my Vineyard to about eight acres, with an intention to double it next winter.

If the above premises have been correctly stated, and I am not aware of having mis-stated any thing, it would appear that the following conclusions may be fairly drawn from them:—

That, although this culture may have formerly failed, it may now meet with success on account of the greater clearing of the country. That intelligent persons, accustomed to it, would only succeed in their attempts after repeated and numerous trials, unless they avail themselves of the experience of others *obtained in this country*. It is very probably, nay it is certain, that Vignerons from Europe would plant, and attempt to cultivate the Vine according to the only mode known to

them, till after several years they would have found it absolutely impracticable. They then would try some other plan, which would also take several years to test, and which, in all probability, would not answer the purpose; and they must be very persevering indeed, if they would try two or three more methods, which may be necessary to be done, before they chance to hit upon a successful one. What a loss of labour and money! What a waste of precious *time*!

On the selection of the Site, and the quality of the Soil best suited for a Vineyard.

The first thing to be attended to is the selection of a proper place and soil for the establishment of the Vineyard. This is of the utmost importance; for, if you build your house on a sandy foundation, it will not stand; neither will a Vineyard prosper on a low, stiff, clay soil, or on a wet one; neither will it do well on a small spot of ground, surrounded on all sides, by thick, damp forests.

The situation best suited, is a high, airy, and dry spot of ground, having no extensive and thick woods overtopping it; for from these will issue foul air, cold damps, and, perhaps, other unascertained injurious matters, all of which will tend to rot the Grapes, produce myriads of insects, which, attacking not only the fruit, but the young shoots and the leaves of the Vine, prevent the full and saccharine maturity of the Grapes, without which good wine cannot be made. The neighbourhood of extensive clearings, old fields, or such as are under cultivation, is, therefore, desirable.—Where, in fact, do we find the greatest variety of the best native Grapes, but on the borders of old fields. It must not be understood, that I mean to say that the vines will not grow almost in any soil and situation; but those growing in low, rich grounds, in a moist and pent-up air, although they may be very vigorous, will produce but little fruit, and that of an inferior quality. As this is of the utmost importance, I must be excused if I endeavour to impress it strongly on the reader's mind, by repeating, that the situation of a Vineyard, must be open, clear and airy. I believe the vicinity of water is no disadvantage to it, provided it be not stagnant. I have seen good Vineyards extend to within a few yards of large rivers, and even of the sea. It would appear by this, that moisture itself, if it be pure, is not detrimental, and it must be remembered, that the vicinity of large rivers and of the sea, is frequently visited by strong currents of wind which may probably carry off the superfluous moisture.

The nature of the soil is next to be attended to—sub-soil, as well as surface.

Examining the nature and habits of the plant to be cultivated, we find that it has very long and tender roots; that they extend far in search of nourishment; and, therefore, we must conclude, that a deep, loose, and permeable soil suits it best. Indeed, experiment shows that the Vine thrives best in a soil, light, sandy, or

gravelly, and containing much vegetable mould, which is nothing else than vegetable matter in a state of decomposition, by which it is rendered fit for the food of other vegetables. We find, consequently, an astonishing vigour in the growth of the Vine cultivated in our sandy lands, compared with the vegetation of other objects of culture, such as Corn, Cotton, &c. because the roots, finding no obstacle in their way, they seek for food and moisture to a great depth. This is so true, that I have observed, that in our very hot and dry seasons, when all other cultivated plants are almost dried up, and no dew is to be found on any of them, a drop of it can be seen at every sharp point of the Vine leaves. All authors, I believe, agree in this, that the soils best calculated for a Vineyard, are the light, sandy or gravelly, or even stony; for between the stones, the earth is loose, and the Vine sends its roots between them without difficulty. When the surface is of the above description to the depth of one foot, to three or four feet, the sub-soil may be slate, stone or clay, without any disadvantage. The best soils, are then the sandy, gravelly, stony, the decomposed leaves, the detritus of granite, of limestone, provided these are sound and dry. It is almost incredible with what luxuriance the Vine grows in our poorest sand-hills, in land that could not, without a great deal of manure, bring more than five or six bushels of corn per acre.

Much has been said and written as to the aspect most proper for a Vineyard. Some have recommended the east, some the south, and others even the north and west. Which of these is the best, is a question of no easy solution; and I have seen prosperous Vineyards in every aspect. This must depend on localities, and remote circumstances. The east is disadvantageous in countries liable to late spring frosts; for as such an aspect receives the first rays of the sun, when the vines are covered with hoar-frost, the effect is, almost invariably, that the young and tender shoots are killed by it; whereas, when the frost has thawed slowly and gradually, the injury caused by it is comparatively trifling. The south is certainly preferable, particularly where it is desirable to have much heat, on soils naturally cold, from causes which I am unable to describe. The west exposes the vines to violent winds, and to a most burning sun in the afternoon, which is sometime injurious, as we frequently find the trunks of fruit trees injured by it. Where very great heat is desired, a south-west aspect is more likely to give it than any other. The north is thought by many too cold, and it is undoubtedly so in many countries, yet in our Southern States, in a warm, sandy soil, we have no deficiency of heat, in any situation, and, I think, the north a favourable aspect in such latitudes and soils. I have often noticed that the north side of our sand-hills are generally more abundant in native Grape Vine than the others. The north side has this advantage, that vegetation begins there somewhat later, and, in consequence of this, the vines are in such situations less liable to suffer from late frosts. It is very remarkable, that some of the best Vineyards of Champagne, in latitude 49 degrees to 50 degrees north, have a northern exposure, notwithstanding their very high latitude. Such as those of

Epernay, Vernesay, &tc. Upon due consideration, I do not think the aspect is of very material importance, when other circumstances are favourable, particularly in warm countries. The judgment of the person who selects the place must be exercised according to his knowledge of the prevailing winds whether violent or otherwise. A good observation I have heard made, is that a place very suitable for a Peach Orchard, is also very suitable for a Vineyard. Now it is well known that a Peach Orchard seldom fails bearing an abundance of fruit on a very elevated spot, without much regard to which of the cardinal points the ground inclines, or whether it inclines at all.

So much has been said about vines being planted on the sides of hills, and even of very steep ones, that many persons are under the impression that no other situation is at all proper. It is very true, that in Europe, such situations are generally covered with vines, and that some of them produce, perhaps, better wines, on account of the declivity of the ground where the Vine grows. Such places are frequently unfit for any other production, and where land is very dear, it is an object of the utmost importance to make use of such lands for so valuable a purpose, which, if not thus employed, would produce but little or no advantage to the owner of the country. Extensive Vineyards are seen, even in France, on level lands, and some of the best wines are sometimes produced from such situations. One consideration ought to have due influence in the Southern States, and in every country where most violent torrents of rain are apt to fall. As the soil must be well-worked, and kept loose and clear of grass and weeds, if a Vineyard is on a steep declivity, it is subject to considerable damage, by the soil and manures, when such are used, being frequently washed down to the bottom of the hill, and it is very expensive to replace them. The situation to be preferred, when choice is to be had, is a high dry spot, the level top of a hill, with a loose, light soil, gravelly, sandy or calcareous, tolerably abundant in vegetable mould, with a sub-soil more retentive of water, (without keeping it stagnant,) at the depth of from eighteen inches, to three or four feet, either of clay, slate, rock, granite, or limestone. If there be a declivity of the soil, let it be very gentle for the reasons above enumerated. It must be confessed, however, that generally, hillsides have a considerable advantage in furnishing the roots of the Vine with a due, and more regular supply of the moisture necessary for its support; and it is frequently well worth the trouble to plough or hoe in such a manner as to prevent the washing down of the soil as much as possible.

On the preparation of the Land, and the Planting of the Vines

In this, as in every thing else, the precepts given by the most experienced writers, are much better than the practices most generally followed. We must keep in mind, that our most profitable methods are always those, in which no pains and

reasonable expense are spared, but are bestowed with judgment, and that the pains taken at the beginning, most generally insure success, when even slight neglect may cause the attempts to fail, in which case, all that has been expended is lost.

Some persons, as if intent on finding out how far they can go in deficiencies, seem determined to ascertain how little work is necessary, that the Vine may barely live. Such injudicious persons plant according to a manner, which shows that the Vine can bear a great deal of ill usage. Some of them plant the vine cuttings by driving with a mallet, an iron pin or dibble, sufficiently long for the purpose, and then insert the cutting in the hole thus made, press it a little all round with the foot or the end of a stick, and then let it take its chance. We suppose the ground had been previously prepared by ploughing. It is very evident, that by making a hole in this manner, the earth is made very hard, in the very place where it ought to be loose and friable, and that the very young and tender roots of the vine, cannot, without the utmost difficulty, pierce through the crust thus made all round the cutting. Others adopt a better way, which is, of making a hole with a spade, of the width of it, and fifteen or eighteen inches long, and about as deep; then laying the cutting somewhat obliquely in it, fill the hole with the earth taken out of it, leaving two or three buds out of the ground. When this method is carefully pursued, the vines will do tolerably well, if the following season is very favourable. A better way, is to make the holes much larger, and deeper; and, what is better still, is to dig trenches about two feet wide and two feet deep, at the distance intended for the vines; fill the bottom with the surface earth or vegetable mould, mixed with the trash that may happen to be with it, such as grass, weeds, corn stalks, &c. covering this with purer mould, and in this, carefully plant the cuttings somewhat obliquely, and leaving *only one bud out of the ground*, pressing the earth gently with the foot, so that it be in contact with the cutting in every part of it, except that which is left out above the surface of the ground. This method will generally be attended with success, and if the season is favourable, very few of the cuttings will fail taking root and doing well. The culture of the Vine, however, is an object of so much importance, and the Vine when well planted and properly cultivated, is of so long a duration, and is so productive, that one ought not to be reluctant in bestowing upon it that preparation best calculated to ensure its fullest success, and to give it the greatest vigour it is capable of, consistently with the object in view—the making it produce a great abundance of rich fruit. Although I disapprove of the use of manures, particularly from the stable, in the common course of cultivation required by the Vine, because it is very apt to injure the quality of the wine; yet, for the sake of securing a vigorous growth to vine cuttings, I would recommend, with the best writers and practical men on this subject, to prepare the soil by very high manuring for two or three years previously to the planting of the vines, cultivating it in Indian corn, or, which is better, in potatoes of either kind; and the summer or fall previously to planting, cover the land with leaves, weeds, and other vegetable

matter, in a decomposing state; then turn the earth upside down, to the depth of two or three feet, or even more if practicable. Care must be taken in doing this, that the whole be well mixed, and that the least rotten vegetable matter be rather at the bottom than near the top. If the ground is stony, the work may be done in such a manner that the stones will form the lowest part. This will serve as an under-drain, if the soil require it, and if not, the stones will not prevent the roots from passing through in search of moisture, should it be necessary for them to go so deep for it. In performing this labour, the stones that may be too large to be left in the ground, may be removed.

This is a very expensive and laborious operation; but it is asserted, that its advantages fully compensate the expense and labour. Monsieur Bosc,[7] one of the authors of the "Nouveau cours complet d'Agriculture," Member of the Institute, and Inspector of the Royal Nurseries, and of those of the French Government, says:—"It is unfortunate for Agriculture, that the expenses of this operation, when it is done with the spade, hoe or mattock, are so considerable, for its advantages are very great, very soon obtained, and very durable. In fact, by it, the earth is rendered more permeable to the roots of plants, to the principles of the air, the rain, and even the heat of the sun, that is to say, to the sound conditions necessary for all rich vegetation; generally a depth of two feet is sufficient. There are, however, vegetable gardens, orchards, &c. where they go as far as three or four feet. In a light soil, the trenching with the spade sufficiently fulfils its object, because the throwing of the earth to some distance, is sufficient to divide and crumble it; but in a soil containing many stones, the mattock is necessary, and this is an instrument that does a great deal of work, but it must be followed by the spade or shovel.

"Whichever of these modes are adopted, you must always require of the workmen, that they leave a space of at least three feet between the part that is done, and that which is not; that is to say, between the part where they work, and that where they throw earth; and watch that they break it fine, mix it well, and take away all the large."

I shall also quote an article, on the subject of trenching as preparatory for making a garden taken from Cobbett's American Gardener; chap. 1. sec. 20.[8]

7. Louis-Augustin Guillaume Bosc d'Antic, a French naturalist, was born on January 29, 1759, in Paris and died there on July 10, 1828. Son of physician Paul Bosc d'Antic (1726–84), he studied under botanist Jean-François Durande and chemist Louis-Bernard Guyton-Morveau at Dijon. During the French Revolution he affiliated with the Jacobins. He survived their downfall and served the French government as a diplomat, in the United States, as vice consul at Wilmington in 1797 and consul in New York in 1798. Recalled to France, he worked as an administrator of the prison system, until securing in 1803 a position supervising the gardens and the seedbeds of Versailles. A prolific author, he was an expert in conchology and agriculture.

8. Sometimes characterized as the first classic of American garden literature, William Cobbett's *The American Gardener, or a Treatise on the Situation, Soil, Fencing, and Laying out of Gardens; on the Making and Managing of Hot-beds and Green-houses; and on the Propagation and Cultivation of the Several Sorts of Vegetables, Herbs, Fruits, and Flowers* (New York: C. Clement, 1821) contained an

"—This is as much as I shall probably be able to persuade any body to do in the way of preparing the ground. But this is not all that ought to be done; and it is proper to give directions for the best way of doing this and every thing else. The best way is, then, to trench the ground, which is performed in this manner. At one end of the piece of ground intended for the garden, you make, with a spade, a trench all along, two feet wide and two feet deep. You throw the earth out on the side, away from the garden, that is to be. You shovel out the bottom clean, and make the sides of the trench as nearly perpendicular as possible. Thus you have a clear open trench, running all along one end of your garden-ground. You will then take another piece, all along, two feet wide, and put the earth that this new piece contains, into the trench, taking off the top of the new, two feet wide, and turning that top into the bottom of the trench, and then taking the remainder of the earth of the new two feet, and placing it on the top of the earth just turned into the bottom of the trench. Thus, when you have again shoveled out the bottom, and put it on the top of the hole that you have put into the trench, you have another clean trench two feet wide and two feet deep. You thus proceed, till the whole of your garden-ground be trenched, and then it will have been *cleanly turned over, to the depth of two feet*.

"As to the expense of this preparatory operation, a man that knows how to use a spade, will trench four rods in a day very easily; [this must be understood of old ground, free from stumps and roots,] in the month of October, or in the month of November, if the ground be not frozen. Supposing the garden to contain an acre, and the labourer to earn a dollar a day, the cost of this operation will, of course, be forty dollars; which perhaps, would be twenty dollars above the expense of the various ploughings and harrowings, necessary in the other way; but the difference in the value of the two operations is beyond all calculation. There is no point of greater importance than this. Poor ground deeply moved, is preferable, in many cases, to rich ground with shallow tillage; and when the ground has been deeply moved once, it feels the benefit for ever after—A garden is made to last for ages; what then, in such a case, is the amount of twenty dollars? It is well known to all who have experience on the subject, that of plants of almost any kind, that stand for the space of three months, in top soil of the same quality, one being on ground deeply moved, and the other on ground moved no deeper than is usual, the former will exceed the latter one-half in bulk. And as to trees of all descriptions, from the pear tree down to the currant bush, the difference is so great that there is room for no comparison," &c.

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extensive section on grape growing (V. art. 310), based on his cultivation of a vine in his city garden in Philadelphia, a trip to view Legaux's two-acre vineyard at Springmill, and his reading of an account of Dufour's work at Vevay by his disciple Thomas Hulme, "A Journal Made during a Tour in the Western Parts of America," that Cobbett would excerpt in part 3 of *A Year's Residence in the United States* (London, 1828).

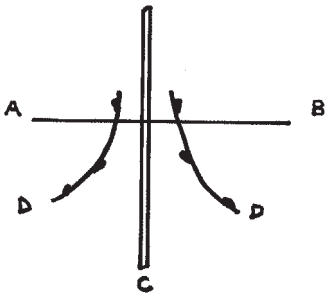
These quotations, suffice to show the opinions of practical and scientific men, on the subject of preparing the land by trenching; and although it is not expected that many will be at the trouble and expense of doing that which is the very best, it is hoped, that the greater number of those who may attempt the cultivation of the Vine, will go as near to it as may be practicable and convenient to them; remembering, that expense incurred in this manner, is like seed sown in a well prepared soil—it produces hundred fold. A mode, therefore, of preparing the ground for a Vineyard, which will approximate to that here recommended, will be proportionally beneficial, as it comes nearest to it. This operation ought to be finished at least a few months before the time of planting, if possible; and the planting in this case, is best done in the fall of the year; for, during the winter, the earth will settle fully, and closely embrace the plants, which will secure their resisting the heat and drought of the spring and summer. The planting may be deferred however, if necessary, without much danger, until the spring, when the ground has been well prepared.

This expense may deter some persons from the attempt; but for their encouragement, I will state, that tolerable success may be obtained, sometimes, with much less. I beg, however, they will consider, that the value of the land is thereby increased more than one hundred times its former value, and, that if such expenses are incurred in Europe, where the first cost of the land is very considerable, our advantage is very great considering that ours costs so small a price, as not to be deserving of any notice, for a purpose of this kind. Vineyards, in full bearing, are of immense value, and do sometimes sell in France as high as one thousand, three, four, or even six thousand dollars per acre. Land is so cheap and abundant here, that it will probably never sell at such prices, though some of it may be worth it; for it is not true, that "the value of a thing is the price it will fetch." If an acre of Vineyard yield sometimes upwards of two thousand gallons of wine, at one crop, as is the fact in some instances; no matter how small the price of such wine may be, the Vineyard cannot sell, in this country particularly, for what it is worth. Supposing the expense of culture be forty dollars, and the wine sells at fifty cents per gallon, the real profit on such an acre will be $960. Say that this is even double the average crop of such a fertile Vineyard, the average of the price would then be $480 per annum, the principal of which is near $7000. I am fully satisfied, that on our poor sand-hill land, with only tolerable management of culture, we may calculate on an average crop of three hundred gallons, when the vines are in full bearing, or when eight or ten years old. Estimate the price of this wine as you please, it will make the value of the land more than it will probably ever sell for. Lands that can now be had in any quantity, at from twenty-five cents to five dollars per acre, can never be expected to sell for three or four thousand dollars, though it is worth it or more by its products.

At what distance Vines ought to be planted, is not easy to determine. This depends on the mode of cultivation and training adopted. I have seen it in the north

and middle of France, at about three feet each way, and sometimes as near as two feet. Such close planting will not do in this country, particularly with the kind of grape cultivated here with success. The distance I have finally adopted for myself, after many experiments, is ten feet by seven feet, and yet I am satisfied, that, after a few years, I shall find them too close, and be obliged to root up a part of them, which will be, of course, the least promising.

The land then, being prepared according to the best manner convenient to the owner, lay off the ground, by drawing lines from one end of it to the other, at the proper distance from each other, and the other lines across the first, and at right angles with them. We suppose the first are ten feet, the others seven feet. It is recommended that the greatest distance between the lines run from east to west if convenient. The intersections of these lines will mark the place of each vine, according to the distance of my choice. It is adviseable to drive a small stake at each intersection, and plant close to it a cutting, or, which is much better, two cuttings, one on each side of the stake, taking care to plant them somewhat obliquely, and diverging from each other thus:—



The line A B represents the surface of the ground; C the stake, and D the cuttings, the tops of which are near each other, having the stake between them, and their lower ends farther apart, that, if both grow, one of them may be taken up without disturbing the other. Those taken up, may be planted in the missing places, or in extension of the Vineyard. The stake may be four, five, or six feet above the ground, and driven to a sufficient depth, that it may stand firm. The cuttings ought to have only one bud above the ground, and this bud ought to be a very sound one. They ought to be at least, one foot deep in the ground. If they are short, place them nearly perpendicular, and if long, give them a curve, that the lower end may lie nearly horizontally at the bottom of the hole, at least one foot or eighteen inches deep. Many authors recommend to leave two or three buds out of the ground; but, reasons, which I think fully sufficient, induce me to prefer only one. They are principally these: It is desirable to training the cuttings with one shoot, and each bud gives at least one of them. By having a considerable part of the cutting above the ground, it is exposed to the heat and drying winds, to which we are much subject

in this country, by which the cuttings suffer much, at the time they require all the moisture they can get, to enable them to push roots. If the upper bud should fail, the next one below will probably grow. Indeed the second bud which is below the surface of the ground, will frequently push, although the upper one has done so. In this case I would suffer both to remain, and, as the lowest one is generally the best, the upper one, if the weakest, is to be suppressed at the next pruning.

To make a cutting put out roots and branches so as to form a perfect plant, is a considerable effort of nature; and, to succeed well, every thing ought to be as favourably ordered as possible. Every thing detrimental must be kept away, particularly in the beginning, such as a hot burning sun, drying or cold winds, and, in general, every thing that seems to affect vegetation unfavourably. Cuttings, therefore, ought to be left as little exposed to these, as may be practicable. Having the cutting all in the ground except one bud, must in a great degree prevent a failure by these causes.

In the cultivation of the Vine, as in every thing else, the cultivator ought to keep in mind, during all his operations, the object he aims at. In this case, it is to have strong, healthy, and vigorous vines, that will bear an abundance of fruit. It is all important, therefore, to establish your plants with long and deep roots, so that they may resist the great drought to which they will be exposed. In order to form strong and deep roots, you must have a deep soil for them; and, as plants are fed by their leaves, as well as by their roots, it is adviseable to encourage a moderate share of verdure to the plants. Almost all authors on this subject, say, that all but one shoot should be rubbed off, as also all the side or interleave shoots; but this practice appears to be unwise; for the leaves, undoubtedly aid the roots, as these aid the leaves. They ought, therefore, to be spared, particularly in the infant state of the plant. The following winter, or rather spring, such of the cuttings as have grown very vigorously, ought to be pruned down to one good bud from the best shoot, if more than one has grown, by cutting off of the rest close to the shoot with a sharp instrument, so as to leave a smooth and clear wound. Those which have not made a vigorous push are to be left unpruned till the following year.

I am well aware, that I shall be accused of innovation and inconsistency in the practices here recommended; but I beg to observe, that I do not object to a very close winter pruning; but that I do not suppress any of the green leaves or branches during the summer, without some necessity, and that I strongly recommend to leave weak plants as many leaves as possible, to strengthen them; and, when you have strong plants, prune very low down, so that your strong and deep roots, may be able to push a large and vigorous shoot, to be the main body of your vine. Remember that when you have an abundance of good roots, you have always a top at command.

As to my advice of not pruning the first winter after planting, except such plants as may be very strong, my experience, and that of one practical writer, support me.

I shall here notice the experiment of this gentleman, which I think is conclusive. It is in page 484, of the 13th volume of the *"Nouveau cours complet d'Agriculture."*

"Mr. David, proprietor at Aix, planted four beds of vines contiguous to each other. He pruned two of those beds, the first year after planting, according to the general practice, and suffered the others to remain untouched. The former announced vigorous shoots, and the second, weak and unpromising ones. The following year, he pruned the four beds, and the result was, that those which were then pruned, for the first time, gave much finer shoots and grapes in greater abundance, and this superiority has remained the same ever since."

This observations agrees perfectly with what is practiced "in well conducted nurseries, where weak plants are cut down only the second year."

If I allow the pruning of the most vigorous plants the first year, it is because some of them are as large the first year, as the generality of them is on the second. They may, therefore, be allowed to bear fruit one year sooner; but their best motive, is thereby to reduce somewhat of their vigour, and render the whole plantation more uniform.

Of the Cuttings

Vine cuttings ought to be about two feet long, a little more or a little less, according to circumstances. The wood of the preceding summer's growth, is the only part of the Vine suitable to this purpose. It is, however, to have, when convenient, about one inch or two of the wood of the preceding year; but this is by no means essential. Some branches are sufficiently long and well matured, to make two or three cuttings; but the first, that is to say, that part which comes nearest the old wood, is considered the best. This, however, depends on the complete maturity of the wood. As the roots are cut chiefly from the buds or joints, it is best that the lower end of the cutting be cut straight across and close below a bud or joint; but the upper end ought to be cut sloping at least half an inch above the upper bud. Although not absolutely necessary in this case, it would be well for the cultivator to accustom himself, when he prunes, to cut with an upwards stroke, and if a slope cultivator has leisure, it is best to tie up this shoot to the stake with some soft matter, such as matting, bull-rush, rye or rice straw, well soaked in water, to render it pliant. In doing this, care must be taken that the leaves be not tied with the straw, or in any manner injured. Keep in mind always, that plants are fed by means of the leaves as well as by their roots, and that vine cuttings have no roots; and that, therefore, their chief dependence, at first, particularly, is on their leaves. Although the tying up of the young shoots for the first year, or even for the second, is not of absolute necessity, it is well to do it; first, a shoot tied up grows stronger, the main

shoot ought to be thus induced to attract the sap—secondly, that the shoot may not lie on the ground and be continually exposed to be trampled upon, or cut or bruised with the hoe, &c.

It has been stated before, that it is best not to prune Vines the first winter after planting, unless they are very strong, and this with a view to bring them more on an equality with the weaker ones which are not to be pruned. This view or object may not be of sufficient importance to induce the pruning of the strong ones; and I am informed, that it is becoming now the fashion, to recommend not to prune at all the first, or even the second year. This may be right; but fashions are not to be adopted, merely because they are such; but because they are founded on sound reason and that advantages are to be derived from them. I have no objection to admit, that my reason for pruning the most vigorous Vines the first year, may be insufficient to induce its being done. Of this, every man is to judge for himself; but I see no very sufficient reason for extending this indulgence to the second year. The objections I have to it are, first, that the Vines must grow too busy, and that the first pruning being the third year must be too severe:—secondly, that by this method, I presume the Vines will not bear the third year, which, though no great disadvantage, does not suit our anxiety to enjoy the fruits of our labour as soon as possible. This method has, however, the advantage of having but little work to do the two first years; for I presume those who recommend it, do not insist on cutting off the upper roots, which are technically called day-light roots.

As I have mentioned these, I may as well express my opinion of this apparently very strange practice, which is also strongly insisted upon both by the theoretical and practical writers I remember having read, with the exception of one, and that is the same Abbé Rosier, noticed before, and his authority is of considerable weight.

In the production of these roots, nature has certainly some important object in view, and it ill becomes presumptuous man to oppose her so violently, as to suppress totally, parts which she invariably produces and re-produces, after they have been cut off. This must not be done without some very strong reasons, which it is proper for us to examine carefully and impartially. The reasons given by the advocates of the practice, are:—that when these roots are suffered to remain, they are exposed to be cut and torn by the plough, hoe, &c. by which the plant is very much injured, and much sap suffered to be lost. Also that in hot and dry weather, these roots on which the Vines are made in a great measure to depend, are dried up and scorched by the heat and drought, which causes the premature fall of the leaves, and the rotting of the fruit; that, by cutting them off to at least within six inches of the surface, the lower roots are induced to grow, to acquire strength, and to extend deeper in the soil, where they always find moisture and nourishment for the support of the plant. All this is very plausible, and may be true; but let

us examine the Abbé Rosier's objections to it.[9] He says, "The Vine is a vivacious plant, which, under a proper system of culture, is capable of prospering in the same spot, during a great number of years. It is scarcely out of its infancy, that all the fine roots which grow from the stem just below the surface of the soil, and extend in every direction, but to a very inconsiderable depth, on all the extent of the ground destined for it. The roots which proceed from the lower part, penetrate deeper into the ground; the instruments of the cultivator cannot reach them; but they contribute much less than the former to the nutriment of the plant, because these are effected by the light, and they find within their reach the alimentary substances which the air deposits at the surface of the soil. Proprietors, therefore, ought to proscribe every where, the practice that obtains in most countries of shaving the Vines; that is to say, to scrape with a sharp instrument the part of the stem below the surface, in order to detach from it all these precious filaments which are treated as suckers or parasites; whilst they are the first means employed by nature, to produce vegetation, and that they ought to be considered as the organs the most useful to the plant. Not only is it absurd to cut them off, but we ought also to know, that they ought neither to be frequently uncovered, nor continually tormented or disturbed in their functions. As great inconveniences may result from too much cultivation, as from cultivation at an improper time, and at certain periods of vegetation, and during, or immediately after certain unfavorable states of the weather. People are sometimes surprised, that a Vine young and vigorous, falls suddenly into a state of languor. They see its leaves turn yellow, and hang down, and the increase of the grapes is arrested; they attribute all this evil to bad winds, which have not blown—to insects, which have not appeared—to the privation of manures, of which the Vine had no need:—the cultivator is alarmed; he sees the cause of the evil every where, where it does not exist; for it is most generally the effect of work performed improperly, or at an unsuitable time." Or, perhaps, never done at all.

These are strong denunciations of the practice alluded to, and they deserve some attention.

Vines, in their native state, are found in the woods; the ground is shaded by trees and bushes, besides being covered with the decayed leaves of several years growth. This, of course, prevents the ardor of the sun from doing any injury to the superficial roots. These find abundant food in this decayed and decaying vegetable matter of the surface for the plant, which has the less need of the moisture and nourishment purveyed for it by the deeper roots. Now, if our cultivated Vines are similarly situated, the question is settled, and the day-light roots must not be cut off. This, however, is not the case. The ground of our Vineyards is not, and

9. Abbé Rosier, *Cours complet d'agriculture Théorique—pratique—économique et de médecine rurale et vétérinaire. Ou Dictionnaire Universel d'agriculture par une société d'agriculteurs*, 5 vols. (Paris, 1786).

ought not to be shaded, except by the Vines themselves; the soil is often ploughed, or otherwise stirred up; no detritus of trees, bushes, &c. is allowed to remain on the ground, to retain the moisture, and add vegetable food on the surface; on the contrary, such food, when it is supplied in the shape of manures, fresh earth, &c. is always ploughed in, or otherwise worked into the interior of the soil. Still the action of the air, light and heat fertilizes the surface, and these troublesome roots run into it, and will continue to do so for years, although they be cut off every fall, which is generally the season for performing this operation. After a time, it is true, they cease to grow, and if the ground has been well prepared for the planting of the Vines, it may not suffer much from the privation of these apparently essential roots. The solution of the difficulty may lie here. If the ground has not been well prepared by deep trenching, as above recommended to be done, and an abundance of vegetable matter placed at a suitable distance from the surface, it appears to me vain to expect, that the lower roots will be attracted deeply enough, so as to resist the great heat and drought of our summers, and find a sufficiency of food for the liberal supply of the plant, without availing itself of the surface vegetable matter, by means of its upper roots. If, therefore, in this case, the upper or day-light roots are cut off, the plant must suffer. If, on the other hand, a quantity of vegetable matter has been duly deposited to the depth of two, three, or even four feet from the surface, it appears to me vain to expect, that the lower roots will be attracted deeply enough, so as to resist the great heat and drought of our summers, and find a sufficiency of food for the liberal supply of the plant, without availing itself of the surface vegetable matter, by means of its upper roots. If, therefore, in this case, the upper or day-light roots are cut off, the plant must suffer. If, on the other hand, a quantity of vegetable matters has been duly deposited to the depth of two, three, or even four feet from the surface, it appears reasonable to suppose, that the roots will be attracted to it, and find, besides the food it will supply, an abundance of moisture, for all the purposes required. In this case therefore, the day-light roots may be cut off without injury, if it can ever be done, which is doubtful yet. It only remains to consider which is the least evil of the two; viz. the cutting of these roots, (when, according to the above reasoning, it may be done,) in the fall or winter, when vegetation is at a stand, and these amputations may be done with the least injury; or the suffering them to remain and run the risk of being cut, torn off and lacerated by the plough, hoe, or spade, in the summer. During this season, the Vine has its most important functions to perform, and it must not be disturbed with impunity, during the time of the performance.

The conclusion would then seem to be, that when the Vine has not been planted according to the most approved method, the operation of cutting away the day-light roots is a dangerous one, or, at least, of very questionable propriety; but, that when it has been planted *secundum artem*, it may be done, not only without injury, but with probable advantage.

I have never performed it myself, on my Vines; for the first had not been properly planted, and some of the others are only now able to bear the operation, while the latest planted, viz. last winter are too young for it. Some workmen whom I have occasionally employed here, have cut off the upper roots of a few Vines; but as there were but few operated upon, and they were not marked, I have not been able to observe the difference, if any. Add to this, that it has been done but once, and that, several years since; so that I can say nothing as to the effect. I am fully satisfied, however, that some of my Vines have often suffered considerably by the injury done to these superficial roots by the hoe, and also by the great heat and drought of some of our seasons. The oldest Vines are too old, and were too badly planted, to be able to undergo an operation, which would be rendered doubly severe by its not having been performed before; for these roots are now very large, and the Vines would run very great danger in having it now performed. This shows the necessity of beginning any thing we undertake, in the best manner possible; otherwise, the evil is most frequently without a remedy. Let us now return to the pruning.

Many persons, ignorant of the art, and who never have reflected on the subject, say, that pruning the Vines, if not a work of supererogation, that it is at least useless:—that Vines in their native situations, are never pruned, and still bear an abundance of fruit every year:—that Mr. Such-a-one, and a dozen others, had cultivated our English grapes in their gardens, which never failed of bearing an abundance of most excellent grapes; and, that after having been pruned, they either ceased to produce fruit at all, or to produce it in their former abundance, &c.

The subject of the cultivation of the Vine, is a thing so new in this country, that it may be worth while to make a few observations on the above objections, which would not otherwise be, perhaps, deserving of notice; for the premises are almost, in every instance, either false, or inaccurately stated. Let us examine them, however, in the order in which they are here presented.

It is not true, that it is useless to prune Vines; for, in this case, the world would have been doing a foolish thing for thousands of years, and that too, at the recommendation of the most celebrated men that we know any thing of in ancient times. I shall here notice one instance in the short but pleasing description of the Vine, which Cicero, in his beautiful tract on Old Age, puts in the mouth of Cato:—

"The Vine that naturally runs low, and cannot rear itself without a support, is, for this end, provided with tendrils, by which, like so many hands, it lays hold on every thing it meets with, which may raise it, and by these aids, it expands and become so luxuriant, that to prevent its running out into useless wood, the dresser is obliged to prune off its superfluous wandering branches; after which, from the standing joints, in the ensuing spring, the little bud called the Germ, pushes out the new shoot, whereon the tender young grape is formed; which, gradually swelling by nourishment from the earth, is at first austere to the taste, but guarded with

leaves around, that it may neither want due warmth, nor suffer by too scorching rays; it ripens by the sun's enlivening beams, and acquires that delicious sweetness and beautiful form, that equally pleases both the taste and the eye; and then enriches the world with that noble liquor, the advantages of which I need not name. Yet, is not the sense of these, nor of all the advantages of husbandry, that so nearly affect us, as the pleasure I find in their culture alone, such as ranging the vines and their supporting perches in exact and even rows—in arching and binding their tops, lopping off the woody and barren, and training the fruitful branches to supply every vacancy, and then contemplating the beauty and order, with the process of nature in the whole."[10]

It is true, that the Vines in their native state, are never pruned designedly; but they are partially so by the numerous accidents to which they are exposed. Whoever has observed them, must have seen, that every year a considerable portion of a Vine in the woods dies, which is a means nature employs to rid her nursling Vines of superfluous branches; otherwise, they would have more than they could nourish. It must be so; for we see so many of them dead in the spring. That so many branches, and frequently whole vines die, must be, because having more than can be supported and well fed, they are exhausted by the quantity of wood, leaves and fruit which they bear. They bear pretty abundantly therefore; but I have only heard of the excellent fruit found on them. If it be good, it is so only in comparison with the almost totality. They are certainly much improved by cultivation, as regards size, juiciness and taste. This I know by experience.

That an imported Vine planted in a garden, should continue to bear fruit according to its kind, though it is not pruned, is not to be wondered at, though the reverse of this would be; and if it has never been pruned, and otherwise properly cultivated, its fruit must necessarily be very inferior to what it would otherwise be, though it continues to be of the same kind. The effect of injudicious pruning on such a Vine, may be to render it for a few years unproductive. This, however, I have never seen, and if it has ever happened, it was not the effect of the pruning, but rather of its having been too long delayed. In a well cultivated Vine, the young shoots are stout and large; the leaves are large, and the fruit, which is also large, is more juicy, more sightly, and in every respect better, than if the vine had been left to itself. As to the quantity of fruit, it may be true that a Vine unpruned, or one pruned by a timid and unskilled hand, may sometimes bear a greater number of bunches of grapes; but test the quantity by weight, and you will most undoubtedly find, that the Vine which has been properly pruned, has very considerably the advantage. Test it also by the quantity of juice extracted from the given quantity, and you will find nearly one-third more in the pruned Vine, than that left in the state of nature.

10. *De Senectute*, section 16.

That cultivation is as necessary to the Vine, as it is to every vegetable we cultivate, appears so evident, that it may seem useless to prove it. The advantages of it, however, are so fully elucidated in the following ancient anecdote, that I cannot resist the temptation of introducing it here; it is very short:—"If a Vineyard does not succeed, the fault is in the man, not in the Vine: it will flourish and prosper under a careful and diligent hand; but it will degenerate and run wild under the hand of sloth and idleness. A gentleman of Rome, who took great delight in Vineyards, some of which he had raised with his own hands, wrote a very elegant piece upon the culture of Vines, and in the most pathetic terms, recommends it to the people of Italy, as the most profitable, as well as agreeable and amusing undertaking." Among many other encouragements, he tells them this story:—"Pavilius Veterensis, a neighbour of my uncle, had a Vineyard and two daughters. Upon the marriage of one of them, he gave with her as her dowry, one-third of his Vineyard. He then doubled his diligence, and cultivated the remainder so well, that it yielded him as much as the whole had done before. Upon the marriage of the other daughter, he gave with her one other third of his Vineyard; and now having but one-third part of the whole left, he so manured and cultivated it, that it yielded him full as much as the whole had done at first."[11]

Let us then cultivate our Vineyards with care and assiduity; and, as pruning is one of the most essential parts of it, let us attend to it. Having settled, that it is most prudent not to prune the first winter after planting, unless the plants are uncommonly strong, the object in view is, to procure a vigorous upright shoot intended to have fruit-bearing-wood for the following year; the young Vine must be cut down very near the ground, leaving only one bud to produce the shoot wanted. It must be observed, that in counting the buds, the lowest one of all being a very small one, is not generally included. The bud on which rests the future progress of the Vine, must be nursed and attended to; for, as it will probably put out early, if the late frost should come after it has put out, it will be killed; to prevent which, when there is such an apprehension, it is proper to cover the bud with any thing at hand, that will secure it from the hoar-frost. Filling up the earth carefully, so as to cover it is a sufficient protection; and when the danger is past, uncover it most carefully; for, in this state, it is very liable to be broken off with a very slight touch. Should this happen, or the young shoot (not having been covered) be frost bitten, do no despair, for the small bud at the foot will put out, and make a good shoot. In this case, the entire bud that has been in the smallest degree affected by the frost, must be entirely suppressed, or else it will make a vain effort to recover, and in so

11. Lucius Iunios Moderatus Columella, *De Re Rustica*, book 4, section 3. Columella's work, written in the first century c.e., with the works of Cato the elder and Varro, comprised the classic Roman literature on agriculture. Viticulture's importance in the account is attested by its being the first subject taken up after an initial discussion of soil. .

doing, will deprive its substitute of a great part of the nourishment necessary to its welfare. As this shoot grows up, every precaution must be taken that it be not broken off; and, as a greater security, it is best, when it is about a foot or eighteen inches high, to tie it very gently, and without bruising it, to the stake placed close to the root for this purpose. Very soft materials are to be selected, and are to be well soaked in water, to render them very pliant. Rice-straw is the best I have found for this purpose; matting, rye-straw, and bull-rush, answer very well also. When this shoot has been well secured in this manner, and not till then, suppress any other shoot or sucker that might make its appearance, and allow none of them to grow except the first and principal one, unless the root is extremely strong indeed, and even then, I should much prefer to have only one shoot, and guard it well from accidents. Suffer it to grow as much as it can without suppressing any thing except two or three of the lowest side shoots or inter-leaves, and all the tendrils or claspers as they make their appearance. If, however, you should have time to tie up this prime shoot as it grows up, and as often as it may need it, it is best not to suppress the claspers, which, in this case, will be necessary to support it; but they become useless, when the Vine is properly tied up, and the substance necessary for their formation and maintenance, adds, when they are suppressed, to the supply of food for the other parts of the Vine. This is, I think, one of the few legitimate instances, when we may be allowed to oppose the efforts of nature; for we, in this case, second her design by other means, equally suitable and more appropriate to our convenience and the object we have in view. The suppression of the claspers is, I think, highly proper and more advantageous, than most writers or cultivators seem to be aware of. When they are left, besides consuming the food that may be applied to the other parts of the Vine, they are very apt to catch hold of the young wood, the leaves and the young fruit, entangle and strangle them, and thereby injuring them, by making it much more difficult to spread the young branches as they should be, and to disengage the bunches of grapes from their grasp, either in the course of the cares due to them during their growth, and also at the time of vintage, when they cause a great loss in the fruit, if they have not been suppressed in due time, which is, as soon as they make their appearance. If any of them are at all to be suffered to remain, it is those that come last and near the top of the young growth. If these have been duly tied and trained up, and all the lower tendrils or claspers have been suppressed, so that any that may come after, cannot touch the grapes or any thing near them, these may be allowed to remain, if it be found inconvenient or troublesome to take them off; for, being quite at the top, and out of the reach of the grapes, the injury they may do, is comparatively small, and perhaps not equal to the trouble of suppressing them.

Many writers advise the topping of the growing shoots during the summer, and I believe it is practiced in most countries. Others say, that these must be left

to grow at full length, and never be shortened. To say that the shortening of the green and growing shoots, is a mode improper and injurious, is not sufficient, it must be proven. Keeping always in mind, that it is not very probable nature would produce long shoots full of leaves, for the sole purpose of being shortened, torn off and mangled, as is most frequently done; but that she must have had some other and better purpose in view; it becomes us to examine the case, and find out what these purposes may be.

It is a common error to suppose, that by the suppression, at random, of a part of a plant, the remainder will and must grow the better. The suppression of any part to have this effect, must be done with a great deal of judgment; otherwise, the effect will be precisely the reverse of what was intended. The object of those who shorten the shoots of the Vine, and suppress, besides, many of the leaves, is to induce the nourishment intended by nature, for the part thus cut off, to pass into the essential parts that remain, and which are generally the objects of the cultivation; viz. the fruit, and also, that many of the leaves being out of the way, the grapes will be more exposed to the sun and air, and thereby ripen the better. As well might we suppose, than an animal will feed the better, if a part of its teeth are pulled out, and that it would thrive the more, if one half of its stomach could be totally suppressed.

At the junction of the leaf stem with the young shoot that produced it, is the bud intended for the following year's growth. This bud is partly surrounded and protected from injury by the spreading foot of this leaf stem. If this leaf is suppressed, particularly at an early period, not only the bud will have lost its protection, but also the food elaborated for it by the leaf. In whatever manner this may be done, certain it is, that such a bud will cease to grow, and will not produce a shoot the following year as it ought to do. On the other hand, suffer the leaf to remain, and shorten the shoot to two or three buds above the fruit, the effect will be, that the buds intended for the following year's growth, and the production of fruit, will, by an effort of nature to regain what has been suppressed, and supply the deficiency of leaves, put out shoots which will generally produce fruit that will ripen, though indifferently, if the season is long enough. Such a management must necessarily injure the Vines materially, and ought never to be done, except on a single branch of a very vigorous Vine, for the purpose of experiment, and of having a few bunches of grapes later than usual. The effect thus produced, must satisfy any one of the impropriety of these unnatural suppressions; for, although they may not be made sufficiently early, or the growing shoot made so short as to produce the full effect here noticed; yet the damage done must be in proportion to the quantity of the shoot suppressed; and the buds which ought to be dormant till the following spring, may be so swollen and near pushing, as to be exposed to very serious injury, by very severe frost in the winter, besides their being apt to grow too early, and be caught by the late frosts in the spring.

The leaves, branches, and other parts of plants, might, perhaps, be properly considered as each forming a separate plant, the roots of which, for a part of the stem of the plant to which they are attached, and of which they form a component part. The functions of the leaves, moreover, being that of absorbing water and other matters from the atmosphere, to elaborate them, to reject such portions of them as are not suited as food for the plant, and convey the remainder thus purified and prepared, to the flowers and fruits, without which, experience fully shows that they will never acquire the degree of maturity and perfection they are capable of. It is evident, then, when the leaves, or any green part of a plant are suppressed, it must receive only a diminished quantity of its proper nourishment, its health be affected by it, its growth impared, and its fruit remain in a state of imperfection.

This might be a proper place to introduce a full dissertation on the theory of vegetation, and particularly on the use of the leaves; and recount the many experiments of philosophers, naturalists, and chymists, which show, that during the day the leaves absorb from the atmosphere, the carbonic acid gas floating in it, retain the carbon and reject the oxygen; and on the contrary, during the night, they absorb the oxygen of the atmospheric air itself, and eject it the following day; besides many other experiments, showing the different functions which nature has assigned to the leaves; but these, although most interesting, would carry us too far in a particular essay of this kind.

If the shoots of the Vine are even to be shortened during the time of their growth, it should not be done till very late in the season, and not then without necessity, which will seldom exist. When, by bad management or accidents, the Vine, while the grapes are in a growing state, has lost a considerable part of its leaves, or the leaves are much impared in their substance by insects preying upon them, as frequently happens, the fruit ceases to grow, either totally or partially, according to the extent of the injury thus done to the leaves, and it never acquires that saccharine maturity which renders it pleasant and wholesome as food, and alone enables its juice to be converted into good wine.

Not only the direct and immediate action of the rays of the sun on the grapes is not necessary to produce this maturity, but it is most generally injurious, particularly in this climate, by scorching the skin, which occasions the grapes to rot. Grapes will ripen perfectly well, and will acquire their full colour without having the direct rays of the sun to fall upon them. They must not, however, be so completely covered on all sides by thick clusters of leaves, that the circulation of the air is obstructed. All the branches ought to be spread and tied neatly to the frame made for their support; so as the fruit will hang loosely and openly, and have the free benefit of the circulating air. The sun is only properly admitted directly to the grapes, when these are fully ripe, to obtain an evaporation of its watery juices; so as to produce a richer wine which is the practice in some countries; but of these hereafter.

The only work, then, to be done the first and second year after planting a Vineyard with cuttings, is, first:—to keep it clear of grass and weeds during the summer, by shallow ploughing or hoeing, whenever it may be found necessary; to keep the principal shoot neatly tied up to the stakes, and, if any green part is at all suppressed at this time, to do it at the very beginning of its growth. This is to be done very discreetly, if at all. In the fall, to give the ground a good deep ploughing, or which is better, to have it well and deeply spaded over.

The second year requires no other work or attention, but this latter must be rather increased, as the shoots will be much longer and stronger, they will have more need of being carefully tied up to the stakes. If any unsightly, ill-placed and unnecessary shoot should grow at the lower part, it is well to suppress it as soon as it appears, so that it may not dispute the precedence in growth with the principal shoot. The following winter, the same ploughing or spading, and the first pruning is to take place, unless some plants have been thought sufficiently large to undergo this operation the first year. Whether or not, they must all now be treated in the same manner, so as to have them all as near as possible on an equality. They must be cut down to one good bud, remembering that the lowest bud of all is not counted. Should a plant be, however, very strong, and have two equally good branches, they might be both left and pruned down to one good bud each. This bud will produce a good strong shoot, which is to give the bearing buds for the third year. This shoot ought, therefore, to be nursed and tied up carefully, suppressing any other shoot that may appear from below as soon as it does appear. Should it happen, however, that this main shoot be not thrifty, and the under shoot promise to be a strong one, I would, in this case, leave them both, and at the following pruning select the better of them and cut off the other.

On Pruning, Training, and other work necessary to the Vine, during, and after the third year.

In Europe, the Vine is generally kept very low, and in the North, middle, and a great part of the South of France, the common height to which it is ever suffered to grow, is from four to six feet. In Champaign, the Vines are planted as near each other as three feet; and I have seen them even less than two feet. They have there the low and the high Vines. The low seldom exceeds three feet in height, and the high seldom more than five or six. The low Vine produces the better wine, and high the greater quantity. The low one is pruned down every year to within a few inches of the ground, and the high about eighteen inches; leaving, sometimes, on the strongest Vines, one of the preceding year's shoots, two or more feet long. These they bend, so as to bring the end to the stem of the Vine, or to the stake which supports it, and being tied thereto, it forms a hoop. By this means, many of the buds

are made to grow and produce an abundance of fruit; whereas, if the shoot had been suffered to remain extended at full length upwards, the two or three upper buds only would have produced shoots sufficiently strong to bear fruit, and would have grown to a very inconvenient height, in this mode of training the Vine. Of all the other shoots of the preceding year, only two, three, or four, according to the age and vigour of the Vine, are preserved and pruned down to one, two, or three buds at most, and all the others are totally suppressed by being cut off close to the old wood; but one of them is sometimes left on a very strong and old Vine, to make a hoop, as stated above. There are, in different parts of the country, some particular modes, which differ somewhat from their neighbours; but the evident aim of all, is to allow the Vine to bear only a small portion of the shoots which it produces of itself, and to prune down the remaining ones to a very few buds, with the exception always of the one kept for a hoop, of which but few are left in a Vineyard, unless the intention is to root up the Vine in a few years. It is, therefore, of some consequence, to get as much fruit as possible from it before it is extirpated. This is, of course, only done generally in a Vineyard, when the Vines are old and on the decay. For whatever reason these hoops have been left, it is, I believe, invariably cut off close to the stem from which it proceeds at the next pruning.

A Vine intended to be planted in espalier, as, indeed, for all other modes, receives precisely the same pruning for the first, that is, they are all cut down to one good bud, for the sake of obtaining one strong, straight, and vigorous shoot. Remember in pruning, to cut with a slope, and at least half an inch, or more, if practicable, above a bud. When intended for a high Vine, espalier, or bower, this shoot is cut off from one to two feet from the ground, and all but the two upper buds nicely cut off. These, of course, will produce two shoots, which, if strong enough, are both left following pruning, and cut-off to within one or two feet from the two year's old wood; that is, these two shoots are treated as the one was on the preceding year, cutting off all the buds but the two upper ones. These must be neatly spread and tied to a frame or trellis prepared for the purpose, and suffered to grow at full length. In this manner proceed, cutting more or less short, leaving more, or fewer shoots according to the strength of the Vine, till it has attained the height intended. During the progress of vegetation, the interleaves as high as one or two buds above the fruit, are to be cut off, leaving a short stump of about half an inch, so that the bud which it protects may not be injured. All the claspers are also to be cut or broken off, at least high enough to have none to interfere with the fruit. The young shoots are carefully tied with matting, bull-rush, or straw, moistened with water, to render it soft and pliant. After this, the preceding summer's growth is pruned much in the same way as in the low Vines; that is to say, they are cut down to two, three, or four buds each, suppressing altogether, such as are weak, ill-placed, or too crowded; for the Vine must have a plenty of space to spread its large leaves and luxuriant boughs loaded with fruit, so that they do not lie in heaps on each other.

I will not presume to say, that none of these modes of pruning and training the Vines will not answer in this country, particularly with European Vines; but I have tried all these, and many more ways of training without success, particularly on the Vines that succeed and thrive best in this country as yet. I first tried the low Vines tied to a single stake, as the most general practice in Europe; it would not do at all. Indeed, how can a Vine be kept from three to six, or even eight feet high, that will put out shoots in one summer, from twenty to forty, or more feet in length? The espalier mode was next resorted to, and did better, but not well; for the grapes continued to rot, and, also, the very high winds to which we are exposed in this country, would sometimes blow, flat down on the ground, the greater part of my Vines. If this had been the only evil, it might have been remedied, by using stronger stakes, and driving them farther down in the ground, and also by joining the different rows together at the top by laths, nailed from one row to the other. This I did, and my Vines stood; but the grapes continued to rot, some very few Kinds excepted.

It is needless to particularize any more of the numerous experiments I made, with a perseverance, worthy of the object in view; but must proceed to detail that which I have finally adopted, having answered my fullest expectations.

Whether I was correct or not, I attributed the rotting of the grapes to insects; but more particularly to the hot steam arising from the earth, which, it seemed to me, scalded the skin of the grapes; and also to the great ardor of our sun, darting its burning rays on the tender fruit, and causing it to perish. In order to avoid this, I concluded, to train up, as an experiment, a few of my Vines, so as to have them with all the fruit and foliage at the top, running horizontally over head. This brought the fruit and young growth seven or eight feet from the ground, which was considerably shaded by it. The free circulation of the air was not impeded below, for all the foliage was at top; so that there was nothing but the posts that support the frames or trellis above, and the bare stocks of the Vine, in the way. This succeeded so well, that Vines which have been thus trained above seven years, have matured their fruit most completely, and have not had on them one rotten cluster since. This was a perfect victory over the worst enemy I had to contend with; and, although a frame-work for this purpose is much more expensive than any of the other modes of training the Vine, yet the expense is but a trifle, compared with the success obtained by it. It requires many years, however, for Vines to reach this height. The Vines continue to bear fruit while they are growing up to it, after which they are much more productive than in any other manner I have tried or heard of. The grapes hang down from the ceiling, perfectly sheltered from the burning rays of the sun, by the foliage; the air circulates freely among them, and they ripen most perfectly. Two other great advantages are besides obtained by this method; viz. the Vines thus high, are much less liable to be injured by the late spring frosts, and the birds do not prey upon them one-fourth as much as when trained in any other

manner; because they have no place to perch upon, to indulge in this repast; and besides, as they fly over, they cannot see the grapes and be attracted by them.

The process of pruning, for this purpose, is much the same as that described above for espaliers. It is, however, necessary to make here some observations upon it. We will suppose a Vine three years old, with one good, strong shoot of the preceding year's growth. If there are two of them, and they are very strong, they may be, each of them, treated in the same manner as if they belonged to different plants. I shall only speak of one which I think is the best. It has been said, that this shoot is to be cut down to about one or two feet from the ground, and to suppress all the buds except the two upper ones. This is correct, and nothing more would be said about it, was there no danger that late frosts might kill the two shoots proceeding from these two buds. To avert this misfortune, it is necessary in this country, to let all the buds stand, until all danger of frost is over, and then cut or rub off the superfluous ones; if the two upper ones are uninjured. If they are, however, injured in the least, cut off the shoot below the injured buds, however low this may be. I am in the habit of pruning longer than I otherwise would do, that I may have it in my power to remedy the evil done by late frosts, to which we are very liable here. Fortunately, the upper buds are generally those that grow first, and, if they are uninjured, many of the lower ones will not grow at all; but when you have cut off those that are in the smallest degree injured, (which must be done,) those below which would have lain dormant, very soon put forth, and the Vine will then produce as good a crop, or very nearly so, as if it had not been hurt by the frost. Such is the great resource in this climate. If you leave a young push that has been ever so slightly injured by the frost, the buds below it will not thrive, because the injured one will make great efforts to recover, and will grow; but it will never do well, and will bear but little or rather no fruit.

If the Vine to be pruned is not very good and strong, instead of leaving a shoot as above-mentioned, one or two feet long, it must be cut down to one good bud, which will produce, for the following year, such a shoot, which may be then left of the suitable length. Remember to guard against the late frosts as above recommended. Late pruning has the advantage, that it causes the Vine to put out later. It will, however, bleed very profusely, which is worse in its appearance than in the fact; for I never have seen the Vine injured by it here.

When the Vine is more than five or six years old, it will sometimes put out such a large and vigorous shoot, as to attain sometimes an almost incredible length. At the following pruning, such a shoot may be left from four to ten feet long. I would, in this case, recommend to suppress, at least, one-half of the buds, that the remaining ones may not be too crowded, and put out strong bearing shoots, which they will do, and this long shoot will form thereafter a main branch, and the young shoots proceeding from it, will then be pruned to two, and some to three buds, suppressing totally some of them, when they are too close to each other. When

this is done, it is well, and even necessary, to saw off some of the old branches that seem to be losing some of their vigour. By this means, your Vine will be, in a measure, occasionally renewed, cover an extensive space of ground, bear every year a great crop, and continue in vigour. I have one, now nineteen years old, that covers a space of seventy feet in length, by an average of fourteen feet in breadth, and is as healthy and well-bearing a Vine as can be seen any where. Suffer, however, your Vines to increase in length but slowly; there is much more danger in aiming at too much, than in greater moderation. If your wood is long and slender, the Vine is too weak to maintain its fruitfulness long, and it does this frequently for some time at the expense of its life.

When you have obtained a sufficient height in your Vines for your purpose, prune carefully, and cut off all such parts as may be in the least unsound or weak, and prune on the young shoots of the preceding summer's growth, to two or three buds; but no more, unless it be such enormous large shoots as mentioned above.

A great deal more might be said to advantage on the subject of pruning and training the Vine; but our object being conciseness, as much as is consonant with the clear understanding of the subject, it will terminate here for the present, after describing the manner which is thought the best for leading the Vines upon Mulberry trees, and train them in festoons from one tree to another, as it is practiced chiefly in Italy and Spain. It may, hereafter, prove a most valuable mode in this country, when we think it proper to raise Silk as well as Wine. I have never been in the countries where the Vine is thus cultivated, and have no personal experience of it. I shall, therefore, copy this article from a most interesting little book, entitled "The American Vine-Dresser's Guide; by John James Dufour:" printed at Cincinnati, by S. J. Browne, at the Emporium Office 1826—page 178, &c. of the 1st edition.

As I copy from Mr. Dufour's work without his leave, I must assure him, as well as the reader of this essay, that my most candid opinion of it is, that it is replete with sound reasoning, extensive and practical knowledge, and that it is just such a work as I should have expected from the author from the acquaintance I had with him some thirty years since.[12] I shall say, moreover, that, although I do not agree with him in several trifling particulars, I recommend heartily his book of which, I understand, he has made a second edition,[13] to all who wish to cultivate the Vine

12. Jean-Jacques (John James) Dufour arrived in the United States in 1796 as the scout of a group of Swiss vignerons wishing to come to America. He toured the middle colonies and probably met Herbemont in 1797 in Pittsburgh when Dufour was trekking inland to see any wine-making establishments operating in the country

13. Since Dufour retained over two hundred copies of the first edition at the time of his death in 1827, the likelihood that there was a second edition is remote. Five hundred copies was the likely print run of the first edition.

and make wine; assuring, that I know of no man more deserving of confidence; his principles and his integrity being of the highest order. I now proceed with my quotation, from his very valuable, though *very badly printed* book:

"Now as to bowers, espaliers, or hedge-rows, and hautins. When the Vines have shot the third year, vigorously, four or five branches, you may begin to fill your bowers or espaliers, and let them climb the Mulberry tree, for the hautins. This last way of training Vines, ought to be the most resorted to the United States, on account of the Silk; and it is of it that I shall next speak. In chapter seven it was said, how Lombardy is all planted; now, it remains to see how those superb festoons are to be obtained. As I never raised Vines that way on a large scale, what I shall say here, is concerning the rules I think the best, and that I shall follow myself, to establish such a plantation, which I have already begun on the shores of Ohio. From fifty to sixty feet distance, rows of Mulberry trees are to be made; the trees in the rows are to be from eighteen to twenty-five apart. The same spring in which the trees are planted, Vines are also to be planted six feet from the trees, at each side in the row, two Vines to a tree. Here I shall prefer marcott's, (layers of the preceding year, with roots to them,) to naked scions, (cuttings,) and it would not be amiss, if two feet wide, where the rows have to come, should have been trenched two feet deep, before the planting of the trees and Vines. Secure both trees and Vines from the plough, by good stakes; prune down your Vines as aforesaid, two or three years, or until the Vines have acquired force enough to shoot branches eight or ten feet long in one year. Then, in March, dig a trench from the bottom roots of the Vines to the tree, about one foot deep, if the ground has been trenched, but two feet if not; being careful to save, unhurt, the lowest roots of the Vines, that you may lay the whole plant, from its lowest end in the trench, one foot or nine inches deep, and bending along the stem of the tree the strongest shoot, and prune it down to six inches from the ground, and cut all the others off; cover the Vines in the trenches with only a few inches of top soil, to hold them down, for the first year; that will encourage the striking of a great many roots all along the Vines, in the bottom of the trench; when the roots are started, or the next year, the trench may be filled up. Nurse, and tie to the trees as they grow, two or three shoots only, per Vine, of what will grow that summer. Next spring, prune one of the shoots up to the fork of the tree, and cut off the others, and rub off all the buds shooting along the Vine, except three or four of the uppermost, that they may be nursed and trained, some along a pole that had been previously put on the fork of the tree, reaching from one tree to another, and the other shoot to be left to climb up the branches of the tree at liberty. If carefully suckered as the suckers appear, they will grow a good deal longer. The next spring, tie along the pole the strongest and longest shoot, and if it meet with the shoot coming from the other tree, entwine them together in the form of a rope, and leave them as long as they

will reach; but prune off every other branch, and rub off, along the pole, every second bud, and all other buds any where else on the Vine to encourage the sap to follow the horizontal Vine along the pole. If all the buds left along that long Vine tied to the pole will strike fruit, the plant would be overloaded. I think it will be necessary to sacrifice the fruit, by pulling it off before it blossoms, to have the quickest Vines reaching from one tree to another; but if you will save the fruit, the Vine tied along the pole must not be left longer than from fifteen to twenty eyes or buds, that eight or ten may grow and bring fruit, one being left at every ten or twelve inches, after every other bud has been rubbed off, then the shoot at the end of the Vine on the pole carefully nursed, and all the other pinched off at the third leaf above the fruit.[14]

"The next year, the shoot at the end of the Vine on the pole may be extended ten eyes longer, that five may grow, after every other one has been rubbed off, and horns of one or two eyes, made with the shoots growing along the pole;" (that is, the young shoots of the preceding year, are pruned down to one or two buds; this is what Mr. Dufour calls horns:) "and so on, every year, until the Vines have reached the next tree, always making one short horn where there was one the year before, but never two. To make a new horn on an old one, the shoot nearest the main Vine is to be preferred, if equally good; and, in spite of all care, the horns will acquire some length in the course of several years; but now and then a sucker or water-spout will shoot from the end of the horn, near the main Vine. That sucker, if not cut too close, will make a good shoot, on which the horn may be renewed, and the old one sawed off. When the festoon is finished, which is, when both Vines from tree to tree have not only met, but each reached the next tree, there will be no other care to be taken of them, but the pruning in the spring, and gathering the fruit; for, against the time the pole is rotten, the double Vines reaching from tree to tree, will be sufficiently strong to support themselves, and will make those garlands and festoons so much admired by the travelers in Lombardy and Spain.

"If they should die or break off, a new pole, and the nursing of young shoots from the main Vine near the tree, will soon fill up the vacancies. It is here supposed the Mulberry had been pruned in such a way, as to have branches forking from the main tree at seven or eight feet high, on which the pole is to rest. When the Vines are very strong, some of their branches may be suffered, though sparingly, to run up some outside branches of the tree, and hang from some convenient

14. [Author's footnote] In this climate, and with strong Vines, if the shoots are pinched off at the third leaf above the fruit, there is almost a certainty that the buds destined for the following year's growth, will put out and produce a second crop which may or may not come to maturity. This will injure the Vine most materially. If this pinching off is done at all, it must be done very late and when the grapes are nearly ripe, which will, in a great measure, defeat the object of the author. It is best, then, not to pinch them off at all, or to do it as late as possible, and at least five or six buds above the fruit. If the shoots are short, it is much safer not to do it at all.

place, taking care only not to impede the gathering of the Mulberry leaves. There is no apprehension, that the shade in a field thus planted in rows, even at forty-five feet distance, would injure any sort of crop raised in the intervals; the Mulberries being stripped of their leaves until the beginning of June, supposing silk was made, and they would recover their foliage in due time to afford refreshing shade to the readers at harvest."

The climate of our Southern States is admirably adapted to this mode of cultivating the Vine; joining to it the raising the Silk, and on the same ground, a third crop of any thing else, whether small grain, Indian Corn, Potatoes, Cotton, or Indigo. It is very obvious, that the particular kind of land which I recommend for the culture of the Vine, namely, our poor sandy land is not suitable for this purpose. We ought to be satisfied to reap from this a rich crop of wine, without expecting any thing else. The vast importance of this culture, (the Vine and Mulberry,) is perfectly sufficient to induce us to yield for it, some of our best high lands, and also some of those rich sandy deposits from our rivers. These are eminently suited to this purpose, and in such lands, enormous profits would necessarily be the result of a plantation carried on with zeal and industry, after having been undertaken with a sufficient capital, under the immediate superintendence of intelligent persons accustomed to it. The procuring of such persons is a difficulty not easily overcome, without encountering, at first, the heaving expense of exporting from Europe families of agricultors bred to this culture. The prosperity of our Southern States, I venture to say, depends, in a great degree, on such an importation; and, when a very great public good is to be the result, as it must undoubtedly be, the expense ought to be defrayed, at least in part, by the government of the country which is to receive the benefit. Private individuals of large fortunes, it is true, might do it, and reap the advantages of their patriotism; but few persons, except, perhaps, some who have not the necessary means, are willing to venture on an untried thing[15] when the experiment is attended with the disbursement of a considerable sum of money, and the returns not to be expected, under the most favourable circumstances, until after several years expectation. There cannot be, however, any doubt of the ultimate success; for, what is done any where under the influence of particular circumstances, must necessarily succeed fully, if undertaken under similar ones. We shall, probably, feel the truth of this plainest of axioms, when we have suffered a little more in consequence of our infatuation in persisting in overstocking the world with Cotton, whether it will buy it or not; or, indeed, whether it can use or not the quantity we chuse to make for its use!

I shall endeavour to treat next of the gathering of the grapes, or vintage, and the making of wine, so as to have it published in time for the growing crop.

15. [Author's footnote] In this country it is untried, but most fully tried in all the eastern world, wherever the climate will permit.

On Vintage

It is usually the practice in Europe, to have many kinds of grapes in a Vineyard; and it is generally recommended by writers and practical men, to mix several kinds by which, they say, the wine will be of a superior quality, than if it had been made of one kind alone. This, like many other old maxims, must be taken with very great allowance, and the proposition, as it is generally announced, is false; that is, it conveys to the mind an erroneous impression. It must be true, that the grape best calculated to make good wine, cannot be mixed with any of the inferior kinds, without deteriorating the proceeds. The more of a superior kind of grape one has in his Vineyard to mix with those of less value, the better will the wine certainly be; but it will not be because of the mixture, but because a quantity of that which is good, has been added to that which is indifferent, by which the product must be improved. Who can doubt, then, that if the wine had been made entirely with the grape used for improving the rest, it would have been much better? The proposition has then been incorrectly announced, or it is entirely false, when, without any further explanatory views of the subject, by which it is made partly true.

Some kinds of grapes make a wine that is very strong and rich, but only in small quantity; others make an abundance of wine that is too weak to be kept long. Another kind produces a wine sufficiently abundant and strong, but it has not the pleasant flavour, called, technically, "bouquet." Another is deficient in strength, but has this delightful flavour, which it is desirable the compound should possess. Another has many of the most desirable qualities, but it wants that beautiful colour that is so pleasing to the eye, and to which much value is attached in Europe;—whilst another has no other recommendable quality but that of yielding this colour so much desired, &c. It is very evident, then, that by a judicious admixture of ingredients, possessed of all the desirable qualities, the result will probably accord with the expectation. Are there any kind of grapes, which, converted into wine by themselves, will produce that which is of a very desirable quality? Most undoubtedly there are. Why then are Vineyards so generally planted with such a variety of grapes, as sometimes to amount to upwards of twenty kinds? We must look for the answer to this question, to the negligence, poverty, indifference, or ignorance in those who planted them. For my part, with those I cultivate for wine, I have experienced no admixtures but what deteriorated the product. Yet, I believe it very possible, that my Vines might be improved by some particular kinds of grapes, mixed in very particular quantities; some kinds being suitable to mix with each other with advantage, when others would do an injury. To ascertain all this, requires numberless and expensive experiments, which must take many years before the result can be at all satisfactory. This can only be expected to be done when we have a great number of persons engaged in this pursuit. Until therefore, this period has

arrived, it is most advisable to make the different kinds separately, which, indeed, is the first proper step to begin the series of experiments; for, by this, you ascertain the particular qualities of each. In the beginning of an establishment, the quantity of each kind will most probably be too small to be made separately; and, therefore, all that are ripe at the same time, must be mixed together. This, however, cannot be considered as a part of the series of experiments, because the first products of a Vineyard are generally of an inferior quality. The quality of the wine increases with the age of the Vine for many years.

The best kinds with which I have, as yet, made wine, are first, the Madeira grape. Any mixture of other kinds with this certainly is an injury, as far as I have tried. By itself it is an excellent wine. This Vine bears most abundantly, and generally ripens about the middle of August. Second, the Lenoir. I have so little of this, that I have not mixed any other kinds with it to try the result; but I am perfectly satisfied with it by itself. It appears to be a wine between Burgundy and Claret; and it is an excellent, rich wine, with a full body and fine flavour. The Vine is very vigorous, never rots, but bears only a scanty crop, though a sure one, except for the birds that prey upon it most destructively as it is the first to ripe, which it does sometimes as early as the middle of July.

Third, the Red Muscat. (I believe this is called, at the North, 'Blands' Madeira.') This might, perhaps, make a good wine, mixed with the Madeira; although I should not like to try a large quantity of it, as it is a pulpy grape, the juice of which is more difficult to settle than the others; and it ripens somewhat later. It is a very vigorous Vine, and a great bearer. It makes a very pleasant wine, but not equal to the first.

Fourth, the Isabella. This is said to be a native of this State. It is a strong Vine, and great bearer. The fruit is large, and handsome when it ripens altogether, which is seldom the case. It has the flavour of the Fox grape, which I consider a great disadvantage to it. The wine it makes is beautiful, as to colour,—a brilliant red, or rather purple—has a good body—is strong enough—rather too heady. It would be very good but for its peculiar taste, which, however, diminishes in time, and the wine improves with age.

Fifth, the Arena. This is a native of our sand-hills, which improves much by cultivation, bears abundantly, and makes a most excellent wine, sui generis; this wine, however, is not fit to be judged of till it is at least one year old. Before this, it has a wild unpalatable taste, which persons not acquainted with the fact, could not suppose it possible ever to make good wine, which it certainly becomes. It ripens in August; it is of a claret colour.

Sixth, the Bullace, or Muscadine. This ripens later, and would probably make a pleasant red wine, were it not very difficult to gather only such as are fully ripe; for this grape, like the Scuppernong, which is a variety of it, and is also most undoubtedly indigenous to this country in the Southern States, does not ripen all at

the same time, and the berries drop when they have attained their maturity; so that you must be several weeks gathering your crop off the ground below the Vines.

I have tried several other kinds, but in such small quantities, as to be inadequate to a fair trial.

When the maturity of the grapes approaches, it is necessary to prepare every thing for the vintage, and never leave that to be done late, when, perhaps, you may not have it in your power to do it well.

There is nothing to which cleanliness is more necessary, than in the process of gathering grapes, and making wine. In this respect, it is like a dairy, the produce of which can never be of a good and desirable quality, if the utmost cleanliness about the vessels used, has not been most fully attended to. I know of nothing that is more apt to take the taste of any thing in contact with it than wine. It is even asserted on very good authority, that strong scented weeds, when suffered to grow in a Vineyard, will impart their taste to the wine made from it. Hence it is, that so many imitations of particular wines are attempted sometimes with tolerable success. It is well known, that Teneriffe put into a cask which has had Madeira in it, and which contains yet a small quantity of the lees, will impart to the former, the taste of the latter; by which means, Teneriffe is often sold for Madeira.[16]

Before you attempt to gather your grapes for wine, see that they have attained the highest degree of maturity; for, that highly saccharine quality in grapes, by which alone they can make rich and durable wine, is the last produce of maturity. The same grapes which make a very generous wine when full ripe, would have made but a weak acid one had they been gathered two weeks sooner.

It is proper here to observe, that it is desirable to gather all the grapes that have attained this proper degree of ripeness, in as short a time as possible; so that all that is of the same quality, be made in the same vat at the same time, after having been all gathered in one day. The principal reasons of this are, first, that the greater the quantity (within practicable bounds) the better, and the more regular will the fermentative process be; and, therefore the quality of the wine superior. Secondly, as it is very difficult to have a large quantity of grapes in one vessel without bruising many of them, and have, therefore a considerable quantity of juice in the bottom of the vessel. If you are more than one day in gathering that which is to be made into wine at one time, that quantity which was first gathered, will have commenced fermenting, when the last is yet in the Vineyard. The fermentation will, therefore, be irregular, which is to be avoided. It is then necessary to procure as many hands as are adequate to the task of gathering, in one day, all that is to be fermented

16. Wine from Tenerife in the Canary Islands. A trade in wine had supported the island since the seventeenth century. See George F. Steckly, "The Wine Economy of Tenerife in the Seventeenth Century: Anglo-Spanish Partnership in a Luxury Trade," *Economic History Review* 33, no. 3 (August 1980), 335–50.

together. Any kind of hands, such as children and old people, will do very well, and can generally be hired at a low rate.[17] Every one of these is to be provided with a pair of scissors and a basket of the contents, of about half a bushel or a little less. A wagon or cart with the hogsheads, having one head out, must be ready, as near the Vineyard as practicable, into which a few of the strongest hands are to carry the grapes as they receive them in a suitable vessel from the baskets. An overseer must see that the gatherers are very particular in cutting out all such grapes as are green, rotten, or otherwise unsound, and by no means to suffer such to remain with the rest. When it happens that a small bunch has only a few sound berries on it, it is best to pluck them off and put them in the basket, throwing away, of course, the woody part or the rotten ones. Care must also be taken, that the gatherers do not eat bread, cheese, or indeed any thing else, while they are gathering the grapes, lest some of the crumbs falling into their baskets excite an undue fermentation, or add an improper taste to the wine. When the hogsheads are filled with grapes, they are to be transported to the cellar which contains the vat and other apparatus for mashing and fermenting them. The vat must be of such a size, that when the mashed grapes are all put into it, it will not be more than about two-thirds, or at most, three-fourths full. If this is not attended to, much of the new wine, which, in this state is called *must*, would be lost, as the fermentation causes the grapes to rise much, and thus to increase considerably in bulk.

The mashing or bruising of the grapes is performed in different ways; most generally, by trampling with the naked feet, previously well cleansed by due washing and scouring. This, though in appearance a deviation from the advised cleanliness, is, in reality, not so; for, I can see no reason why a man's feet, being duly prepared, should not be as clean as his hands. This method is considered the most effectual, and is, therefore, the most generally practiced. The man can feel with his feet, when the grapes are properly bruised, and when scarcely one of them remains entire; whilst there is no other means of ascertaining it so effectually by the other methods. The next manner of performing this operation is also by trampling a small quantity at a time in a box, pierced with many small holes, and supported over the vat by two pieces of timber or scantling across it. In this case, the man's feet are armed or rather shod with wooden shoes; and when the small quantity in the box is well mashed, it is thrown into the vat, by raising a sliding board on the side of it, and raking out the mashed grapes; after which another small quantity is put into the box and treated in the same manner, till the whole is done. Another method, very similar to this, is that which I first used and still use occasionally, that is, to take wooden pestles instead of wooden shoes.

17. Herbemont's decided preference was to employ wage laborers from the local population of the poor for grape harvesting than to employ slave labor. He did, however, over the course of the years sometimes direct his wife's house servants in wine-making tasks.

I have never read, seen, or heard of any other manner of mashing the grapes; and it is particularly surprising, that in very extensive establishments, contrivances are not adapted that may perform this operation in a speedy and effectual manner. Probably the fear that a machine might crack the grape seeds, which would be very injurious to the wine, is the reason why such a machine has not been used; for it is most obvious, that a pair of rollers would answer the purpose. Satisfied that the dreaded inconvenience might be obviated, I, last year, constructed a machine with two plane or smooth rollers, so fixed, that, by means of wedges, they may be brought sufficiently near to crush all the berries, and sufficiently far apart as not to crack the seeds. The rollers are, besides, made of tupela, which is a soft wood. They are about six inches in diameter, and two feet long. A crank at each roller turned by two little boys with perfect ease, answered my purpose tolerably well. Besides the two little boys for turning the rollers, it required a careful man to draw the grapes along an inclined plane on which the grapes were deposited, so as to fall evenly between the rollers, which, being fixed temporarily over the vat, the latter received the mashed grapes. I found this mode very expeditious, cleanly, and tolerably effectual. This contrivance might be improved, probably by adding another pair of rollers under the former; so that the few berries which may have escaped the first pair, may almost surely be mashed by the second.

Whichever of these methods has been used, as soon as the operation is done, it is proper to stir well the whole together, so as to mash them more thoroughly, if possible, and then cover the vat with clean boards, or any thing else, and let it lie still to ferment a shorter or longer time, according as the weather is warmer or cooler.

It is impossible to give a general and sufficient rule, regulating the time the mashed grapes are to be left fermenting in the vat. This depends on so many circumstances, that it is not easy to include them all; after which it would have to be left to the experience, judgment, and object of the person who conducts the operation. Some wines are not at all fermented in the vat, as the Champaign;—others are fermented but a short time; and this is the case when a light coloured and delicate wine is the object;[18]—others are fermented much longer, when the intention is to obtain a highly coloured wine, with strength, astringency, and body enough to ensure its durability and its improvements by age. Others are fermented still longer, when the object is to distil the proceeds into brandy. The delicacy of taste in the wine is no object in this case; but it is as desirable to have as great a product in spirits as can be obtained; and this is effected by suffering the fermentation to proceed so far as to have converted the whole saccharine and other fermentative matters into alcohol.

18. In recent practice the vat fermentation of white wines tends to be substantially longer, but it is conducted at much lower temperature, made possible by mechanical refrigeration.

If the weather is warm, as it is generally in this country, during the time of vintage, the fermentation goes on very briskly, and will commonly have been sufficient after from twelve to twenty-four hours for usual purposes. The smell of the matter in fermentation as also its taste, help to form the judgment; for a strong and pungent smell of alcohol will be diffused on uncovering the vat, which, together with a sharp taste in the must, indicate the approaching time for drawing off the must, and carry the residue or murk to the presses that the whole of the juice may be extracted. Another sign is this:—the contents of the vat increase considerably in bulk during fermentation, as was said before; and it will rise in such a manner, as to assume an upper surface of considerable convexity. Once or twice during the process, it is well to break through this convex surface, which is called the cap, and to stir the whole so as to mix it well. It will soon rise again, and grow very sensibly warm. Some persons wait to draw off the must until this rising convex surface or cap begins to subside, and then lose not a moment; for then the fermentation may go too far and there is some danger that the vinous may give place to the ascetous fermentation, whereby you would obtain vinegar instead of wine. It is then more safe not to wait till you run such a risk, particularly when the thermometer is as high as 80 degrees or 90 degrees or more, which is frequently the case here. During such hot weather the fermentation goes on very rapidly; but, with attention, you run no danger, and I never have found any difficulty in this.

You then draw off the must out of the vat, by means of a large spigot near the bottom of it, with a small bit of basket work, or a small bundle of twigs placed inside the vat, so as to cover the aperture of the spigot, to prevent the murk from running out with the must. The must is then put into very clean, sweet, and very tight casks, and filled to within three or four inches of the bung hole, so as to leave a space for fermentation to proceed, and not lose the wine that would overflow with the foam and lees, if the cask was too full. Some persons fill up their casks quite full, by which much scum and lees are thrown off by the fermentation; but, as a quantity of must escape with these, and these will subside to the bottom of the vessels, it is a pure loss without any advantage to make up for it. The bung hole is then covered with a tile or some such thing, or, which is better, with a small bag filled with sand; or, which is the practice I have followed, with three or four grape leaves loaded with a double handful of sand, a little moistened. This acts as a valve, which the fermentation raises and lets out the generated air or carbonic acid gas, which, if the vessel was closely bunged, might burst it, unless it is uncommonly strong and made for the purpose. Besides, as atmospheric air is necessary in the process of fermentation, this might be stopped if the air was excluded. The hissing noise indicates the continuation of the fermentation; and, when this begins to abate, it is necessary to add a little more of the must to the casks, so as to bring nearer being full; and when you can no longer hear this hissing or boiling noise, add still more of the must till the cask is within an inch or an inch and a half of being full, and

then put in bung, driving it slightly in. This precaution is not alone sufficient, for, unless your vessel is very strong, it might burst or force open a joint, by which your wine might leak out before you are aware of it, which has happened to me. To prevent this, make a small hole with a gimblet near the bung, and stop it at first very loosely, with a peg left so long, that you may conveniently take it out, which you must do at first, at least twice a day, leaving it open for a few minutes—and afterwards only once a day; and when you find the danger is over, drive it in tight. Still observe often, and pull out every three or four days to let the accumulated gas escape. Finally, drive in both the bung and the peg tight, after having filled up the cask to within an inch, and let it rest. After this, nothing is to be done to it, except filling up the casks once a fortnight, until after about two months, when, availing yourself of clear frosty weather, you are to draw it off into other casks prepared to receive the new wine, in the manner to be hereafter described, for I must now return to the vat and the press.

The vessels are to be of oak, though some other kind of wood may also be suitable. I have heard of the ash and cherry wood, the latter of which is supposed to impart to wine a pleasant flavour. Oak, however, is most generally used. When they are made purposely, it is best to use white oak, in preference to the other kinds. The staves ought to be very thick, in proportion to the size of the cask, thicker than those usually made for any other liquid; or the fermentation of new wine exerts such a power, as frequently to open joints which had been considered as perfectly tight. Casks for wine, then, ought to be made by a first-rate cooper; and care out to be had, that, in the making, the inside be a good deal burned or charred with shavings, but not so much as to open cracks in the wood. This partial charring, diminishes, considerably, the taste of the wood which might be injurious to the wine. When old casks are used, those having contained French brandy are to be preferred; and after them, those having had good wine in them. In preparing the latter for new wine, one of the heads must be taken out, and all the tarter which adheres to the inside, carefully scraped out, and the vessel thoroughly washed with lime-water or lye of ashes, and afterwards with clean water, and wiped dry before the head is put back in its place.

When they are used for the must, just from the vat or the press, nothing else is to be done to them, though some recommend to put a small quantity of French brandy into it, just enough to wet it. But, when the casks are intended to contain the wine, when it is drawn off from other casks, either the first time or afterwards, the casks are further prepared, by burning in them, immediately before they receive the wine, a sulphur match,[19] prepared by dipping stripes of coarse linen or

19. Thin strips of pine, one end of which was wrapped in sulfur-coated cloth. Larger and longer-burning than present-day matches, the items Herbemont used were not self-igniting.

cotton cloth, into melted sulphur or brimstone. You take a few inches of such a match, more or less, according to the size of the vessel, and with a wire that will reach to about the middle of the cask, terminating in a hook. To this hook you stick your match, and having lighted it, put it down the cask, and loosely stopping the bung-hole till the match is burned, after which you fill the cask. Although wine very readily imbibes any foreign taste, it will not retain long that of sulphur, so as to be perceptible, unless much too great a quantity has been used. The effect of this match, is to prevent the wine from turning acid.

Wine vats are made of different forms and different materials. It is said the best are made of stone, or even of brick. These are of a square form, the joints being well filled with a good cement, which is also used for plaistering the inside very smooth, and in the best manner possible, that it may neither crack nor peel off. Such vats are also used in some countries for keeping wine in; but, as these are only wanted where great quantities are made, it is not worth while to say anything more concerning them at present. We shall then, notice more particularly, those most commonly used. They are made of oak wood, well seasoned, and of a dimension proportionate to the quantity of grapes to be made into wine. They are generally made narrower at top than at bottom, that they may be made tight, by driving the hoops without any difficulty. It is better, perhaps, to make them perfectly cylindrical inside, and the outside wider at bottom, which is easily done, by having the staves of double thickness at the lower end. This is sufficient to allow of driving the hoops, so that the vat may be perfectly close. I shall here give the dimensions of one I had made in this manner, noticing, at the same time, the quantity of wine that may be made in it at a time, so that persons may regulate the size of theirs according to circumstances.

The internal diameter of the vat is full four feet six and a half inches, and its depth three feet two and a half inches above the bottom. A quantity of mashed grapes which yielded one hundred and fifty four gallons of must, (these were the Madeira grape, which are uncommonly juicy,) nearly half filled the vat, covering the bottom to the depth of eighteen and three quarter inches. I conclude from this, that this vat is large enough to make nearly three hundred gallons of wine at once, with grapes that yield a great deal of juice. The staves average four and three quarter inches in width, of equal width all their length, one inch thick at top, and two inches at bottom. The bottom is made of planks one inch and a half thick. There is a cover of fine thin boards made in two parts for the convenience of putting it on and off.

Before a vat is used, it ought to be prepared much in the same way as is recommended for casks. The way I prepared mine was, after having kept it full of water for some time, to make it perfectly tight, and also to dissolve such remaining parts of the sap as might be yet in the wood, and give a taste to the must, I white-washed

it well with lime about a week or two before it was wanted. I then had it scoured and well washed, and I found this to answer the purpose very well.[20]

Another kind of vat very highly, and, I believe, very justly recommended by Mr. Dufour, in his valuable work from which I have quoted before, well deserves a particular description, which I will give in his own words. It begins at page 237, first edition.

"After the Vineyard has been established, the next thing is the preparation to receive the crop and make the wine. A good cellar, well furnished with vessels, is nearly as necessary to make wine as the Vineyard;—you may have plenty of grapes, and yet not be able to make good wine without a cellar, except by brewing and mixing it with drugs or spirits, and that is not that genuine wine spoken of in Holy Writ, *that cheereth the heart of man*. It is a known fact, that distilled liquor produces on man quite a different and opposite effect; instead of dilating the heart it contracts and crisps it, and light wines are reputed the most wholesome, but require good cellars to keep them.

"The first vessel, where the grapes are to come in from the Vineyard, if white wine is not intended to be made with black grapes, is a vat holding enough grapes for one pressing; for a strong press, it may be six hundred gallons; but since it has been found out, that some spirit issues out of the wine with the gases, proceeding from the fermentation, I have proposed to put the bruised grapes in a tun holding from five hundred to one thousand gallons, according to the strength of the press, well iron-bound, and strongly made, able to bear an inside pressure of from five to ten pounds to an inch, having a small door or wicket, cut or sawed at the lower edge of one of the heads, so that the same piece will make the whole tight, by shutting from inside, being drawn through by a key, iron screw, or staple, and just big enough to admit a common man to go in. The tun must also have a big bung-hole on top, six or eight inches in diameter, that the grapes may be easily introduced into it. Two of such vessels set near a press, so that the liquid contents may be drawn by a cock, and the murk or husk by the wicket, will be sufficient even for a large Vineyard."

The advantage contemplated by this kind of vessel for fermenting, is one that has been suggested by some of the most eminent writers on the subject, and strongly advocated by Mr. Dufour, is to prevent the escape of the carbonic acid gas, which is considered an advantage to be retained. In this manner, the fermentation goes

20. [Author's note] As soon as the planks had been sawed for the staves as well as the bottom, they were put into the water of the mill-pond for seasoning them. This method is particularly suitable for our purpose, as by this means, the sap is dissolved and washed away, and the wood is left more free from taste as when seasoned by any other means. The planks remained thus immersed in the water for six or eight weeks, after which, they were piled up with sticks between them, to dry and keep them from warping.

For smaller quantities, I, of course, use smaller vessels, such as a tub, a hogshead, or a half-barrel, &c.

on more slowly, but will still go on perfectly with due attention. This gas may also be collected; and Mr. Dufour has found, by actual experiment, that a considerable quantity of alcohol escapes with it, which may be converted into brandy, by distilling the water through which it has been made to pass. This subject would, however, carry us too far for the present. We must now consider the best kind of press for our purpose.

Any kind of press, such as used for cider, for packing cotton, &c. will answer the purpose, making such alteration in the latter, that may be necessary. Screw presses are always used in Europe, and some of them are very complicated and expensive structures, frequently, I think, unnecessarily so; for, the simpler machinery is, provided it has the power and the conveniency requisite, the better it must be. I have a press of an excellent construction, any number of which may now be had, from circumstances not necessary to be noticed here, at a very cheap rate. It is made with two double screws of cast-iron. I call them double, because the head, or rather mortise made to receive the lever, by which the screw is turned, is in the middle, being left square for the purpose, and it terminates at each end by a screw, which works in cast-iron nuts inserted into two wooden beams, one above and the other below. The screw part at each end, is four feet long, and the square part between them is two feet; so that the whole screw is ten feet long, and two such screws are used for one press. They pass through the beams, leaving a distance between them of eight feet. The beams are about two feet wide and one foot thick. On the middle part of the lower beam, (which lies on two pieces of timber laid flat on the ground, the screws, of course, run into the ground at the lower end, into holes made for the purpose,) is fixed in a temporary manner, a layer of planks about five inches thick, so as to make a platform five or six feet square. A circular groove, of about three feet or more in diameter, is cut in the upper surface that the juice or must may run out into a tub placed below to receive it, and also to retain in its place a kind of cage placed upon it to hold the mashed grapes to be pressed. This cage is made cylindrical, of oak planks or staves, four, five, or six inches wide, about three feet long, and one and a half inch thick. These are connected together by means of hinges, two of which, the working pin so contrived, as to be easily put in and taken out. These staves are not fastened by the hinges so as to be close, but so as to have a space of one-eighth or a quarter of an inch between them, to allow the juice to run out into the groove in the bed below. This cage being in its place and filled with the bruised grapes brought from the vat—planks, full of small holes, and filling loosely the inside of the cage, are placed on the grapes;—then putting pieces of scantling across them, with a large block upon them, so as to reach near to the upper beam. The groove in the bed has, of course, an outlet, under which a tub is placed to receive the must as it runs out. Every thing being thus well prepared, and having been particularly careful in laying the mashed grapes as evenly as possible, two men, with one lever each, turn each of the screws slowly, and carefully examining that

the blocks on the grapes go down straight and level. When these two men have pressed down with their levers, as hard as they can, with the assistance of two more men, they use longer and stronger levers, turning the screws slowly and carefully as before. When the pressure is as hard as can be given, let the whole remain for a while, as long as the juice runs pretty freely, and then unscrew till the upper beam is run up nearly to the end of the screws. You, then, with a hammer, drive out the loose pins of the two hinges noticed above, by which means the cage will open, and you can take it away, leaving the grapes or rather murk in the form of a hard cake. This cake you take out with a spade, loosen it well, and, having fixed the cage in its place again, return the murk into it, that it may undergo another pressure; and this operation may be repeated once or twice more.

I have been thus particular and minute in the description of this press, which is partly of my contrivance, as I could give no plate to facilitate the explanation, and I hope it will be intelligible.[21]

I never have seen a press like this in France; but I am satisfied it equal in power to any, and superior in simplicity. As it is the simplest, so it is of the least expensive construction. As regards the cage, which is somewhat expensive, on account of the number of hinges it requires, other equally good and cheaper contrivances may be used.

Miscellaneous Observations

There are many other modes of proceeding in the making of wine besides the one above detailed; but it was thought that most commonly used, as being the plainest and most generally useful, was entitled to the preference in this very imperfect essay. For example:—some persons prefer separating the berries of the grapes before they mash, and ferment them, so that they have none of the stems. This is thought proper for very particularly delicate wines; but it is not generally approved, as it is believed the wine thus made does not keep so well. The stems of the grapes are, besides, thought to impart to the wine a slight astringent taste, which adds to its salubrity, and is in great estimation. Champaign is made without the use of a vat at all for fermenting, and the grapes having been gathered in the morning before the dew is off, they are carried carefully without bruising them, and put at once into the cage of the press and immediately pressed, the grapes not having been previously mashed. This is done chiefly with a view to avoid colouring the

21. [Author's note] All the staves that form the cage being joined to each other by hinges, a smaller one may be conveniently contrived as I have done, by having two more hinges fixed with loose pins, by which means you may take out a section of the cage, and thereby have a smaller one in which you may press a smaller quantity of grapes. In this case, there must be, of course, another groove inside the large one, so as to fit the smaller cage.

juice by fermentation with the skins; for, although Champaign is the most colourless wine, it is made with black grapes.[22] Other wines, on the contrary, are made in a very opposite manner, taking care not to gather the grapes while *the dew is on them;* but after they have been gathered, they are spread thinly, and suffered to remain till they are almost *converted to raisins* before they are mashed, fermented, and pressed. The same object is sometimes obtained by twisting the stem of the grapes so as to interrupt the communication of the sap, and let them remain till they are partly dried. The object of this is evidently to evaporate so much of the aqueous parts of the juice, that what remains may be capable of producing a rich and strong wine. The same effect is also obtained by reducing the quantity of must by boiling. All these different methods have their advantage; but it is always at the expense of quantity, and it is not probably that a method by which the quantity of produce is very greatly diminished, will be preferred in the beginning of the establishment of a Vineyard, when the crop is generally small enough.

If greater strength is required for the wine than the mere juice can produce, some other means must be adopted by which the quantity may not be diminished. This may be the more necessary for us for three reasons:—first, the grapes of young vines are not so rich as those of older ones;—secondly, we have not yet cellars cool enough to enable us to keep long very light and delicate wines;—and, thirdly, we are so accustomed to strong wines in this country, that the merits of delicate light ones are not sufficiently appreciated. The most obvious and readiest method of adding strength to wine is, to mix with it a quantity of brandy; but those who recommend this, are not aware, that by mixing brandy with wine, it deprives it of that delightful liveliness and brilliancy which is one of the best qualities of wine; for, if one drinks wine with a view to produce intoxication, a much more simple way of producing this effect, is to drink brandy. (I don't give this as a secret weapon.)

The grapes that yield the richest and strongest wines are those that contain most saccharine matter, which full maturity does not always produce. This is also the case, as above stated, with young vines. It is also the case in cold and rainy reasons, when the grapes are filled with too watery a juice. It must be allowable, then, to add to the grapes what they may be deficient in; and it is obvious, that, by adding sugar, this will be obtained. This sugar ought to be added to the grapes in the vat before the fermentation takes place. In order to ascertain the quantity of sugar necessary, an instrument called "Areometer," "Hydrometer," and "Pese Liqueur," is the most convenient. That which I use is "Beaume's Areometer for Syrups."[23] This instrument is a glass tube, with a bulb at one end with mercury in it. When it is immersed in pure water, it will sink to o. in the scale of degrees marked on it, and by

22. Usually Pinot Noir.

23. The standard French instrument for measuring the density of liquids, invented by A. Beaume in 1764. It has a graduated glass cylinder as the external element providing the readings.

adding sugar to the water, the instrument will rise in proportion to the quantity of sugar dissolved in it. The quantity of sugar naturally contained in fully ripe grapes can thus be ascertained, so far as is practically useful. The juice of some grapes is so deficient, that the instrument will only rise to five or six degrees; whilst others of those I have tried, will rise to from ten to thirteen degrees. Now, by adding so much sugar to the must as to bring the instrument to mark 14 degrees or 15 degrees, wine sufficiently strong is obtained, and this is done with from half a pound to one pound and a half of the best dry brown sugar per gallon of must. If stronger wine is desired, the addition of more sugar will certainly produce the desired effect, without giving to the wine a sweet taste; but the sugar will be all converted into alcohol by fermentation. The juice, of course, must be tried with the Areometer before the fermentation takes place; for, if you wait until the fermentation is over, the instrument will sink deeper than O.; and the stronger the wine is, the lighter it is; and consequently, the deeper the instrument will sink into it; so that the heavier the must is made with sugar, or is so, naturally, the lighter and stronger the wine will be when it is fully made.

As this instrument is not always and everywhere to be got, something approximating to its effect may be obtained, by making use of an egg, and trying it with different quantities of sugar dissolved in water, or, which is best, in must. It must be observed, that taste is not a test to be trusted in the grapes on their juice, for it takes very little sugar to render water very sweet to the palate, and yet not be sufficiently so to produce a sufficiency of alcohol to make a durable wine.

The preceding pages will be found probably to contain all the most essential necessary directions for cultivating the Vine successfully in this country, and for making wine, although they form a very imperfect essay, particularly as regards the style and the arrangement of the different parts of the subject, and the elucidating, in a clear manner, many parts which the writer found very difficult to do without the assistance of plates. He trusts, however, that, with patience and perseverance, the readers will generally come at his meaning. He does not know, whether he ought to offer an apology for publishing so imperfect an essay on a subject so very interesting; for he may be asked why he has not done better, if he had it in his power. To this, and much more that may be urged against him, he can only say, that he could not very easily have done much better in the time he had allotted to himself; viz.;—until the approaching maturity of the grapes, unless he had encroached too much on his other avocations and on his convenience. Some may say, that if he could not do full justice to the subject, he ought not to have undertaken it at all. There is something rather forcible in this; but, before its due weight can be ascertained, the objectors ought to know exactly the degree of importance which this

writer attaches to this subject, and the consequent earnest or even anxious desire he has to see the adoption of a branch of culture, the various benefits of which he has the most exalted opinion of. Upon due consideration, he thinks it is best to make no apology at all; for something like presumption might, perhaps, be found intermixed with his enthusiasm and wish to do a great good.

He cannot, however, yet dismiss a subject, which cannot be exhausted in one hundred times the number of pages here dedicated to it, without promising, that he will, occasionally, furnish such observations as he may think useful, to fill up, and perhaps, encumber a few pages of the "Southern Agriculturist." He would most earnestly recommend to all who have it in their power, to search among our native vines for such of them as are most likely to make good wine; and there are, no doubt, many treasures of this kind scattered through our forests. Several kinds have already been found, that far exceeded the most sanguine expectations; and it would be most silly presumption to suppose, that the very best have been discovered at the very onset of the search. There cannot be a doubt, that cultivation will improve the native vines; and, by selecting those that bear the greatest quantity of fruit, are the most juicy, and contain the most sugar, we can scarcely fail in producing grapes and wines of very eminent merits. Among the many different kinds of foreign grapes lately imported into this country, some will, no doubt, be found to thrive in our various soils and climates; although there are reasons for believing that many of them will not. It is, therefore, very desirable, that extensive experiments be made on this subject, although they are very expensive.

Wine Making

January 23, 1833

When Gideon B. Smith, editor of the *American Farmer*, tasted Nicholas Herbemont's wine in the summer of 1831, it proved a revelation. He shared his bottles with members of the Maryland Society for Promoting the Culture of the Vine, a group of planters and wine connoisseurs organized in 1829 to advance grape cultivation in the region beyond where John Adlum had taken it. While the group cultivated the clubby epicureanism that became a fixture of bachelor companies of the era, it did have certain serious preoccupations. One concern of the group was the medicinal use of wine for stomach ailments, and the delicacy of Herbemont's white wine struck the group as ideal for such applications. "This is an important characteristic of Mr. H.'s wine, and enhances the value of it greatly."[1] The restorative power of fine wine had been a commonplace of understanding since antiquity, but in the midst of the rising temperance war on alcohol consumption, it was politic to recall this ancient truth. Yet for the Maryland Society the ground of the vintage's worth lay in its taste—"the most delicate and delicious flavored of any we ever tasted. We tested its quality pretty extensively, having expended a considerable sample of it among epicures in the article, all of whom, without an exemption, pronounced it *particularly* fine." One of the company, "Pomonkey" (John W. Fendall?) of Charles County, Maryland, wrote Herbemont personally to request the method of his wine making. Gideon B. Smith seconded the request and offered to open the pages of the *American Farmer* to whatever Herbemont produced. The desire of the Maryland circle had been to secure an account of Herbemont's process from harvesting grapes to corking the filled bottles.

What he produced indicated that he believed his way of cultivating vines was as important to the final product as the art of fermentation. It took five months for Herbemont to fulfill the request. The essay he produced delighted Smith, who in a long editorial effusion published in volume 14, number 48 (February 8, 1833), under his byline, "The Farmer," recommended it to his readers: *This little treatise will be invaluable to vignerons, and to persons about entering upon the culture of the vine, and we bespeak for it an universal reading and entire confidence. For ourselves we consider it very far superior to any treatise extant, because it is so brief, and withal so plain, that any person may follow its directions without difficulty.*

1. "American Wine," *American Farmer* 14, no. 30 (October 5, 1832), 233.

Mr Herbemont has been able in this short essay to concentrate all necessary information on the subject; and being a practical vigneron, and the results of his practice being very far superior to any ever before accomplished in this country, every word of the essay is entitled to the utmost confidence. Published in two installments, the editor broke the essay into a section on "the vine" in *American Farmer* 14, no. 48 (February 8, 1833), 380–82, and "wine" in *American Farmer* 14, no. 49 (February 15, 1833), 388–90. The title of the entire performance, "Wine Making," reflected the fascination of the editor. When the piece was reprinted in the *Farmers' Register* 2, no. 8 (January 1835), 471–78, it took a phrase from Herbemont's closing paragraph, "of the culture of the vine and of the making of wine," as the title. Smith had the essay printed as a pamphlet and distributed it as a premium to interested subscribers. A copy of *A Treatise on the Culture of the Vine and on Wine Making in the United States* (Baltimore: Hitchcock, 1833) survives in the collection of the Alderman Library at the University of Virginia. It does not differ from the text printed in the journal.

Columbia, S.C. Jan. 23, 1833

My Dear Sir, The very glittering and pressing request of Pomonkey,[2] and so urgently backed by you, that I should communicate fully to the public through your valuable *American Farmer*, my process for making the wines which yourself and several very respectable gentlemen of Baltimore have been pleased to speak favorably of, renders it a very willing duty on me to do as you request, to the best of my slender abilities. I should have done so long ere this, had I not been prevented by a multiplicity of engagements, which together with my waning strength and ability, have put it utterly out of my power to comply before this. I shall then proceed without further apology to do my best in the shortest time possible.

Before I proceed to the immediate object of the request, it may not be amiss to make a few observations on the vine and any thing pertaining to its culture, and such other preliminaries as may suggest themselves to my mind as I go on.

1. The Vine

That the culture of the vine does not involve any great mystery, and that it is not carried on through very difficult processes, is abundantly evident by the great

2. Dr. John W. Fendall "Pomonkey" derived his name from Pomonkey in Charles County, Maryland, overlooking the Potomac River. Benjamin Fendall II had named his plantation in that county "Pomonkey" in the eighteenth century. I presume the vintner who addressed Herbemont was a descendant who resided in Charles County, yet visited often in Baltimore, staying perhaps at Woodlawn, home of Dr. Edward Fendall. "Pomonkey's" letter to the *American Farmer* dated February 18, 1832, reveals several interesting things: he had twenty acres of vines under cultivation, including *Vitis vinifera* cuttings from Château Haut Brion, that he had been to France and seen champagne country and the Médoc, and that he belonged to the botanical circles receiving plant specimens from the western expeditions. See *American Farmer* 13, no. 52 (February 24, 1832), 396.

variety of methods used in the different parts of the world where that culture is attended to; for, not only do the practices of various countries differ from each other, but perhaps also there are no two sections of the same country where the practice or mode of culture is precisely the same. Although we cannot doubt that some of these are preferable to others, yet all are attended with a success more or less perfect; besides which it is most probable that the infinite varieties of sites, soils and climates, as also the most innumerable varieties of the vines themselves must render some difference necessary for the various particular circumstances. Admitting these observations to be correct, the choice of the particular method of culture, and of all the cares it requires, must rest chiefly on the judgement of the owner of the vineyard, or of the practical man that works it. It necessarily follows, from these premises, that the culture of the vine is not only unattended with difficulties, but that any variation from the best mode may not necessarily be followed by ruinous consequences. General principles are then all sufficient with persons possessed of any judgement, and it is useless to write for others. An enlightened cultivator of this or any other plant, ought to be acquainted with the doctrines of vegetable physiology, and from his practice form his own judgement of the peculiar habits of the plant he cultivates, and of the various circumstances that may properly modify its culture.

Plants grow, increase in bulk, and are kept in a healthful state from the abundance and nature of the food that nourishes them, and this they extract from the earth by means of their roots, and from the air by their leaves and other tender parts. The vine is naturally disposed to push shoots of very great length, so that in rich soils it climbs to the tops of very high trees. The roots of plants are usually proportionate to their tops; hence it follows the vine thrives best in a soil that is loose and easily penetrated by its long roots which go to a considerable depth in search of moisture as a necessary supply for the great expenditure of it, which it must suffer by its very extended ramification and abundant foliage. The latter, however, imbibes from the air, particularly in the night, a great proportion of the moisture necessary for its support, and also to furnish for this expenditure during the day.[3] The abundance and quality of its fruit depend, in a great measure, on the just equilibrium between this supply of food and moisture and its due evaporation. If there be a superabundance of it, the grapes are too watery and deficient in saccharine matter and other necessary ingredients to form a perfect fruit, and it is moreover very liable to rot under these circumstances. To obtain good, sound and rich grapes, it is probably better that the supply of moisture be rather defi-

3. This supposition reflects a school of thought that hypothesized that the water nourished the vine from both roots (the traditional understanding) and leaves. The role of leaves in gaseous transpiration had not yet been clarified in botany. Herbemont's contemporary, the Swiss plant physiologist Nicolas-Théodore de Saussure (1767–1845), showed that carbon dioxide and water were the building blocks of plant nutrition; this was the precondition for the discovery of photosynthesis.

cient than over-abundant, and under any circumstance, the soil and situation for a vineyard ought to be selected with this object in view, and also that the supply of moisture be as regular as the nature of things will admit, and that as much as is practicable, independently of the seasons, whether these are dry or wet. A light, deep and permeable soil seems to offer these conditions; for in such, the roots of the vines, if these have been planted at a sufficient depth, will reach to where water is never very greatly exhausted, nor ever greatly superabundant. In a severe drought the moisture of the earth is only diminished, but never exhausted, below a few inches of the surface; and this is rendered evident from this, that during such a season, when most other plants are deficient in dew in the morning, a little drop of it is usually found at every point of the leaves of the vine, which shows either that its roots furnish the supply from the great depth to which they descend, or that the leaves by their temperature, probably occasioned by this very supply, condense during the night, what little moisture is in the air; though during such periods of great drought, the neighboring plants seem not to have this property, at least in an equal degree. On the other hand, when the season is uncommonly wet, particularly when this is not so much caused by the frequency of the rains as by the great quantity of water that sometimes falls in a very short time, the roots of the vine which are at a considerable depth, are not suddenly affected by it; for rain does not sink rapidly and deep. On the contrary, it may be observed by any person, that after a spell of wet weather of several days continuance, the water has penetrated only a few inches, at least in any considerable quantity. The roots, then, are not drenched with a superabundant moisture, unless they are within a short distance from the surface. The management and culture of the vine must then be with a view to these effects, and the same precautions tend to guard against both cases. It is endeavored to attain these desirable objects by various means. First, in planting the vine, the holes or trenches should be made much deeper than its present roots will reach, and if manure is used, a portion of it should be spaded in the bottom of the hole for the purpose of inducing them to grow downwards. The vine is also planted somewhat deeper than it was in its natural situation taking care not to fill up the hole even with the surface, lest the plant should suffer after its transplantation from the want of the due influence of the air and other atmospherical action on its roots. It is thought best to leave the holes unfilled by eight to twelve inches, and gradually to fill them up in the course of one, two, or even three years, according to the depth to be thus filled up. By this means the plant gets accustomed to grow with its roots deeper than it would otherwise do. Another practice followed with the same view, or rather to obtain a continuance of the same end, is every fall to take away the earth at the foot of the vine to the depth of six to eight inches, or thereabout, and to cut off all the surface or horizontal roots within that depth. It seems reasonable to suppose that this operation must induce the vine to have its dependence on its lower roots, the upper ones having been suppressed. Now it

has been shown that the drought does not very materially affect the earth below a few inches, except very gradually, the supply of moisture will then be rendered more uniform by the roots being deep, and, in wet weather, the upper roots having been suppressed, they cannot furnish to the vines so great an addition to its usual moisture, as would be the case if these roots had been suffered to remain with the immediate influence of the weather. This practice, therefore, also tends to equalize the supply of moisture during a rainy season as well as during one of the drought. Experience having proved that the grapes are very liable to rot when the season is very wet, it appears, therefore, advisable to adopt the practice here above noticed, so as to counteract, as much as in the power of man, the irregularities or intemperature of the seasons.[4] As it has been showed, it is hoped satisfactorily, that it is desirable to have the vine rather dry than moist, it follows, of course, that a high, clear and open place is the most suitable, and that the proximity of dense forests is injurious, by retaining a damp atmosphere, when on the contrary a free circulation of dry air is beneficial. This observation is sanctioned by the experience of thousands of years, and Virgil has said, "*Denique apertos, Bacchus amat colles.*"[5]

The cultivation or the stirring of the soil is next to be considered. The general practice in Europe is to stir the soil deep and often, and it is therefore universally recommended as a sine qua non. It may seem presumptuous to doubt the advantages of this practice in every situation and climate; but it seems to me that reasoning on the objects in view, it may be more injurious than useful in a climate subject to long and heavy rains. The oftener and the deeper the soil is stirred, either by the spade, hoe or plough, the more rain it will imbibe, and if it be desirable to have less of it, it follows that in such a climate the earth ought not to be stirred either often or deep, but just sufficiently to keep the field clear of grass and weeds. In support of this heretical opinion, I will ask, whether it is not in this country, universally seen that vines planted in yards, in towns, and similar situations, where the surface is never stirred up, but always beaten hard and frequently paved, generally succeed better and much more seldom fail, than in the open cultivated situations and in field culture? And are not our abandoned old fields proverbial for producing great crops of our native grapes? These facts cannot be doubted. Now it is evident, that in such situations the earth imbibes very little water from the rains compared with the cultivated fields; for it runs off as fast as it falls, and the number of houses which cover the ground of their vicinity, must undoubtedly keep the earth much more dry than in the country. Add to this the streets by which they are surrounded, and which are always hard and many of them paved, suffer the greatest portion of the rain that fall on them to run off, whereby the earth in all

4. Moisture and heat are the favorite conditions enabling the outbreak of the fungus. Trellising to maximize moisture evaporation is a standard procedure for minimizing the effect of black rot.

5. *Georgics*, book 2: "Bacchus loves the open hills."

the neighborhood is necessarily much more dry than the fields. If it is true, then, and it seems to me that it cannot be doubted that the vines growing in such places bear better and more surely, it follows that the nearer the situation and other circumstances of a vineyard approaches to this state of things, the more we have a right to expect success in our attempts at cultivating the vine extensively in this country. As the abundance of moisture is not opposed to the growing of the vine, but on the contrary assists it, a young plantation should be treated differently, and the ground should be kept loose and perfectly free from weeds and grass, until the young vines have taken a permanent hold of the soil, and the better to secure this, I would advise the application of some well rotted manure, vegetable earth, or the like, mixed with the natural soil in which they are planted. This will insure to them a strong growth which is desirable at first.

The pruning is also to be noticed. And here I shall observe, that we ought, in all our attempts at cultivating the vine, or, indeed, any thing else, our first object ought to be to assist nature in her operations; but never to oppose her with right down contradiction in her modes of proceeding; though we may avail ourselves freely of her willingness to change somewhat her ordinary course to accommodate us. The usual method in Europe is to keep the vines low, and to prune very close, by which means the young shoots are proportionably large, vigorous and sappy. Every part of the vine of the summer's growth, is larger and more succulent than if it had not been pruned. This, it appears, has somewhat the same effect that a greater degree of fertility of the soil would produce. Another effect is, that by suffering a much smaller number of shoots to grow, the vines are more open, by which a freer circulation of air among them is obtained. It may be observed here, that within certain limits, the poorer and drier the soil is, the richer the fruit, though less abundant. The more freely the sap runs up to the ends of the growth, the more vigorous and large this growth seems to be. To procure, therefore, as great a crop as desirable, without running the risk of having the fruit too weak in saccharine matter, the practice frequently obtains to prune short, viz: to three or four buds, more or less, according to the strength of the vine, every shoot of the vine except one which is kept two or three feet long, but bent round so as to form a circle by tying the end of it to the foot of the vine, near about the place where this shoot takes its rise. Mr. Forsyth aims at the same object when he recommends to trim the young shoots of the preceding year's growth, which he keeps much longer than is done in vineyards, horizontally in a serpentine form, by which the movement of the sap is rendered more slow. When we understand the object and effect of these practices, we can govern ourselves so as to obtain the same effect by similar means adapted to our circumstances. That the grapes of old vines are richer than those of young ones, must be accounted for on the same principles; for young vines push with a much greater luxuriance than old ones, and bear accordingly a more watery fruit. This, I believe, is the case generally with all sorts of fruits, and it is frequently found

that when the trees are planted into too fertile a soil, they bear little or no fruit; the little they bear being very inferior. This, at least, is the case with the peach.[6]

Whether it be owing to our soils and climate, or to the nature of the vines which we cultivate most successfully, or to both causes combined, certain it is, that our vines grow larger here than in Europe. We should, therefore, adapt ourselves to our circumstances, and prune and train them accordingly. Young vines, about six to twelve years old, are often seen to put forth shoots in the course of one summer, from thirty to fifty feet long. It is impracticable to keep such vines within the height of three or four feet altogether, as is the case in most of the vineyards of France. The object that nature seems to have in view is to form a large tree, and if we employ all our art and skill to defeat her, it appears to me that it must be to our disadvantage. During these years of great growth, then the pruning ought to be such as to moderate only this propensity of the vine to its enlargement, but not to destroy it.

At the first planting of a vine, it ought to be cut down to one or two buds, so as to give it no more to do that its impeded vigor will allow it to perform. By this means, instead of having a number of slender weakly shoots, we shall have one or two strong ones, that will give us the prospect of a luxuriant healthy vine. The second year, the vine ought to be pruned short again, to about three or four buds, and suffer only one or two of these to grow. This course may be followed, gradually increasing the length of the vine, until it has attained to a considerable extension. The longest and strongest shoots ought to be shortened in proportion to their strength, and trained horizontally, or nearly so, in such a manner as to fill up as evenly as possible, the space allotted for it, suppressing entirely all the weaker ones, those that are misplaced, and cutting down to four, to eight or ten buds, the middle sized ones, and be sure not to leave too many of them, that in the summer the vine be not too bushy and confused.

I train mine to the height of about eight feet, and then lead them horizontally overhead on a coarse trellis formed of laths, either split or sawed.[7] This trellis is supported by posts merely split, as if intended for a common worm-fence, or sawed when a saw mill is convenient. These should be made of the most durable wood I can get, (here we use light wood.) This frame or trellis forms squares of about two feet and a half, and to it I tie the vines with willow twigs. There is a considerable

6. Given the historic importance of peach culture in the midlands of Carolina and Georgia, and given Herbemont's disinclination to promote the cultivation of fruit trees as the remedy of upcountry agriculture, one notes his experiments with peaches planted in the sand hills and other soils with interest. Herbemont experimented with peaches, plums, apples, and mulberries at various times. Presumably cider and peach brandy had none of the allure for Herbemont's tongue possessed by vintage wine.

7. Trellis configuration remains a subject of much innovation in the wine industry. In the east the six-foot T trellis with six-foot (normal) to nine-foot (wide) spacing between rows prevails. Certain types of Y trellis forms reach eight feet at their points of extension.

advantage in tying the vine on the under part, instead of on the top, which is this: when in the spring the shoots are growing luxuriantly, they are easily broken off by the wind, if they are not supported, and they are too tender to be bent down to the trellis. The frame of the trellis is formed of laths four inches wide by one inch and a quarter thick, placed edge wise. The vine being tied under this, the young shoots readily find a support against the smaller laths nailed on the top of the larger ones; or they may be gently inclined towards them and fastened by some soft substance, and very few are broken down by the wind. In this manner of attaching the vine to the frame or trellis, all the old wood, even that of the preceding year's growth, is fastened underneath the laths, and all, or nearly all the young growth, rests on the top, fastened down to any part of the trellis, an the grapes hang down between the laths, the foliage being thereby above, protecting the fruit from the immediate action of the sun, and direct influence of intemperate weather. A full grown vine well trained and spread in this manner, with its fruit hanging down, and surmounted by the green canopy of the leaves, is a very beautiful sight. Another slight advantage of this manner of training is, that the grapes cannot be seen from above, and that, therefore, the birds are much less attracted by them. An old vine is to be pruned according to the same principles, and in pursuance of the same views, as the younger ones, viz: to leave only as many bearing branches as are necessary to fill up the space, and less than this if the space is great, and prune them shorter or longer according to their strength and the number of them; figuring to one's self whilst pruning, the effect of the future shoots, both in filling the space, and in being sufficiently distant from each other as not to be crowded and impede the free circulation of the air. It is, of course, better that there should be some vacancies between the growing shoots than that these should be too close.

As the vine is growing, it is advantageous to take off the interleaves or side shoots, called by some "robbers," and also the claspers, at least as high as two or three buds above the fruit; but, as you thereby deprive the vine of its natural means of fastening itself to the frame for support, their place (the claspers) should be supplied by tying them in their suitable places, with some soft substance, such as bass-matting, bulrush, or even corn shuck, softened in water. The claspers, if left near the fruit, are apt to entwine round it and injure it greatly. I call "interleaves," those secondary shoots that grow on the primary ones, at every joint, and seem destined to protect the buds that intended for the following year's growth; and it may be better to cut them off, leaving about half an inch of it, than break them off close to the principal stem and the buds they protect. Be this, as it may, if they are all left, some of them do sometimes grow too large, shade the fruit too much, and seem to nearly obliterate the bud which we think they feed and protect. The leaves ought never to be pulled off, particularly near the fruit, except perhaps when it is nearly ripe; for they are a provision of nature to procure food, sustenance and protection to the buds destined for the following year's growth; for if the leaves are

pulled off, these buds would thereby be starved. If such leaves are ever suppressed from necessity, they should be cut off so as to leave, the greatest part of their footstalk or stem. Neither should the principal shoots be shortened, nor, at any rate, until late in the season, and when the fruit is nearly ripe. The shortening of them induces the interleaves to grow much more than they would otherwise; and if they are cut off only a few buds above the fruit, this operation usually forces the growth of the buds depended upon for the following year's fruit, as well as its accompanying appendages of leaves, &c. This operation, in several kinds of vines, makes them produce a second crop of grapes which may ripen tolerably late in the fall, but seldom uniformly and as perfectly as the first; and this is, moreover, as stated above, at the expense of the following year's crop, and to the injury of the vine. If this be ever done for the purpose of obtaining a second crop of grapes, only one branch or rather shoot, ought to be so treated, unless the vine is large and very luxuriant, when two shoots to each such a vine may be made thus to perform a double task. I know that this operation of shortening the shoots is recommended by many writers on the subject, and this with the view, as they say, to throw more sap and nourishment into the fruit. In this I believe they are mistaken; or, if not, I am satisfied it will not answer a good purpose in our climate and with our luxuriantly growing vines. It seems to me that the reasoning of these writers is not correct; for, if plants take in nourishment from the atmosphere by their leaves, the suppression of a considerable part of the leaves bearing shoots, must deprive the vine of a part of its expected food; though, perhaps, the fruit may be rendered thereby the richer in saccharine matter, by subtracting from the luxuriance of the vine. This may be the case, though my experience seems not favorable to such a conclusion; besides the inconvenience of losing the buds of the next year's crop. In order to ascertain, in some degree, the effect of shortening the shoots on the fruit, and to prevent the growing of the interleaves and buds, I have several times operated as follows, on shoots which I intended to cut off at the following pruning. After cutting off the shoot two or three buds above the fruit, I carefully with a pen-knife scooped out all the buds of the shoot, taking care not to injure the principal leaves. The effect on the fruit was so insignificant as not to be observable. The grapes ripened well, but were neither larger nor better than the others; indeed they were rather smaller.

2. Wine Making

Wine is the fermented juice of the grape; any thing else, though it may be called by this name, is not wine, but only an adulteration or an imitation of it, which may be palatable, pleasant, and perchance, wholesome. By far the greater part of the those liquors that are generally known by the names of "home made wine,"

"Manufactured wine," &c., and even many that are sold as genuine, are compounds which are frequently injurious to health, and very seldom inoffensive as a usual beverage.[8] It has been observed that the people of this country are more liable to dyspepsia, liver complaints, and other diseases of a similar nature, and that the frequent use of ardent spirits, even in a very diluted state, or disguised under the form of various wines, is the chief, if not the only cause of it. A taste for strong wines has, unfortunately for us, been produced, probably by the first importers of wines across the ocean,[9] who, fearing lest it should not resist the effect of so long a voyage, thought of securing it by adding to it a quantity of brandy; and a wine which is not strong enough, when drank in a very moderate quantity, to produce something like an incipient state of intoxication, has been rejected as trash, and a decided preference given to such as had a powerful effect. Really good and genuine wine is among the best of the numerous blessings that a kind providence has bestowed on man, to assist him in supporting the many vicissitudes to which he is exposed; and, without it, this would truly be "a valley of tears." But like most other valuable gifts, it has been abused, and what was intended to induce good and social feelings between man and man, to produce cheerfulness and a becoming hilarity, temperance and health, has been converted into an engine of mischief, ill-temper and disease.

It is very difficult to counteract habits and opinions of long standing, even when they are admitted to be founded on error, and very injurious. We cannot, therefore, expect to gain an unqualified assent to the propositions here above enounced, or that implicit submission will be yielded to them. Believing firmly as I do, that the promulgation of them, and the offerings as a proof of the assertions here made, an opportunity of giving them a full trial, I conceive it my duty to exert my feeble efforts to induce the real philanthropists of this country, to make a full trial of cultivating the vine, and of making wine which they will know to be unadulterated; satisfied that good genuine wine, like virtue, need only to be truly known to be truly loved.

The methods of making wine in various parts of the world are as diversified as the culture of the vine itself. They are founded, however, on general principles which must be understood before success can reasonably be expected. It is needless here to give an elaborate analysis of wine. It is sufficient to say that grapes being

8. Herbemont read the American edition of F. C. Accum's landmark work, *A Treatise on Adulterations of Food, and Culinary Poisons: Exhibiting the Fraudulent Sophistications of Bread, Beer, Wine, Spirituous Liquors, Tea, Coffee, Cream, Confectionery, Vinegar, Mustard, Pepper, Cheese, Olive Oil, Pickles, and Other Articles Employed in Domestic Economy. And Methods of Detecting Them* (New York, 1820).

9. See David Hancock, "Commerce and Conversation in the Eighteenth-Century Atlantic: The Invention of Madeira Wine," *Journal of Interdisciplinary History* 29 (Autumn 1998), 197–219, for an account of the transformation of Madeira by its transshipment. Herbemont knew the wine before it had become the strong, dark, mysterious drink that captivated the taste of the southern planters.

fully ripe, contain, besides other ingredients necessary to produce fermentation, a quantity of sugar, which the process of fermentation disposes to be converted into alcohol, which may be obtained from it by the process of distillation. The unfermented juice of the grape, which is called 'must,' is very sweet; but when it has become wine by fermentation, scarcely any remnant of a sugary taste is perceptible. It has then become fit for use, being nutritive, stomachic,[10] and exhilarating, according to the proportion of the sugar it originally contained, and the perfection of the fermenting process. Fermentation goes on, though insensibly, for a long time, even for years, when the liquor becomes more perfect, more mellow and pleasant: in short it becomes good old wine.

Before one proceeds to the gathering of the grapes, every implement used, vats, press, casks, &c. must have been prepared before hand with the utmost care. Great nicety and perfect cleanliness, are of the utmost importance; for there is perhaps nothing that takes so readily the taste of substances with which it comes into contact as wine. Every vessel, then, that is to contain it in any stage of the process must be properly cleansed, and if new casks are used, great care must be had that they have been well charred inside, and purified by repeated washings with water, common salt, and lime or ashes. Some recommend a decoction of grapevine leaves poured hot into the casks, and afterwards well rinsed with pure water, and well drained.[11] If the casks have contained wine, one of the heads is to be taken out, and the inside will be found incrusted with tartar which must be scraped out, and then it is to be cleansed as above stated, for the new ones, except that they need no charring, nor long soaking to extract the taste and coloring matters of the wood, as new vessels do. I have generally found that vessels that have contained French brandy, particularly that which is not highly colored, are the best seasoned of any for wine. Other spirits, such as whiskey, apple or peach brandy and rum, give the casks a taste which can scarcely ever be got rid of. After the casks have been well drained and are dry inside, the finishing preparation is to burn a sulphur match within them, and put in the bung, when it is fit to receive the liquor. The sulphur matches

10. A stimulus to digestion.

11. This Old World technique was still employed thirty years later in the extensive vineyards at Hermann, Missouri, center of German wine making in America: "To prepare the new casks, and also the vats, etc., for the reception of the must, they should be either filled with pure water, and allowed to soak for several days, to draw out the tannin; then emptied, scalded with hot water, and afterwards steamed with, say two or three gallons of boiling wine; or they can be made 'wine-green,' by putting in about half a bushel of unslaked lime, and pouring in about the same quantity of hot water. After the lime has fallen apart, add about two quarts of water to each pound of lime, put in the bung, and turn the cask about; leaving it lie sometimes on one side, sometimes on the other, so that the lime will come in contact with every part of the cask. Then pour out the lime-water; wash once or twice with warm water, and rinse with a decoction of vine leaves, or with warm wine. Then rinse once more with cold water, and it will be fully prepared to receive the must. This is also to be observed with old casks, which have become, by neglect or otherwise, mouldy, or have a peculiar tang." George Husmann, *The Cultivation of the Native Grape, and Manufacture of American Wines* (New York: George E. Woodward, 1866), 138.

are made by dipping strips of coarse linen or cotton cloth into melted brimstone.[12] A piece of it about an inch wide, and three or four inches long, is enough for a quarter cask. It is lighted and suspended by a wire so as to be about the middle of the cask. The bung is used to stop the hole and hold the wire to its place while the match is burning, which takes place in a minute or so. It is proper to observe that casks used for new wine ought to be very strong, and of very thick staves, or else after the sensible fermentation is over, and the bung is driven in close, the insensible fermentation which still goes on, will force the wine through many places that would have contained almost any other liquid without the least leakage.

There is not much danger of the grapes being too ripe for wine, and the vigneron must be aware that it is only when grapes have acquired the utmost degree of maturity, that they contain as much sugar as it is their nature to do, and that it is only during the last part of the maturing process that they acquire this most desirable ingredient; for grapes are fit to eat long before they are ripe enough for wine. It is very desirable to select good, dry and pleasant weather for the vintage, and to have gatherers in sufficient number to gather in one day, or two at the most, all the grapes that are to be made into wine at one time. The reason of this is obvious; for fermentation begins as soon as they are together in quantity, and before they are mashed; so that any that had been gathered several days before, if mixed with the last, will be in different stages of fermentation, which may disturb the process in some degree. In gathering the grapes great attention must be given to the gatherers, that they pick out all such berries as may be rotten and all the green ones, and that they do not unnecessarily bruise them. Common scissors with both points sharp, are the most convenient implement to gather the grapes with, and take out the bad ones. The stems should be cut short and each bunch carefully deposited in baskets or other suitable and convenient vessels. These are occasionally emptied by the carriers into large tubs and, carried immediately into the vat, if near enough, if not, into hogsheads, with one head out and set up in a wagon to receive the grapes, and thence, when full, carried to the vat. This is a large vessel made of oak, very strong, and of a size proportioned to the quantity of grapes to be made into wine at one time, and the larger it is the better; for it is believed that the fermenting process goes on the better, the greater the quantity of matter in fermentation. The grapes are then to be mashed. There are various methods of doing this. The most common one is for men to get into the vat with their naked feet and legs, and trample them down until they suppose every berry is bruised. A better and neater way is to put a small quantity of grapes at a time into a box placed on pieces of timber over the vat, the bottom and sides of the box being perforated with holes. A man then gets in with a pair of wooden shoes used only for this purpose, and

12. Whatever the purification rationale, this operation gave the caramelized "burnt oak" quality to the wood, and therefore the taste of wine.

when the contents are sufficiently bruised, one of the sides, which is made to slide in and out, is taken out and the mashed grapes are shoved into the vat, when another supply of grapes is put in, and so on till the whole of it is done. A better way still, which I never have seen in use or ever heard of, until I had contrived it for my own convenience, but which I have since seen delineated and recommended in Thiébaut de Bernéaud's *Manual*, &c.[13] It is two rollers with each a crank. These rollers are about two feet long, more or less as may be needed, and about six or seven inches in diameter. They are so placed on a frame as to be easily brought closer or farther apart, so as to crush the berries without cracking the seeds; to prevent which bad effect, I selected a very soft wood, the tupelo, so that the seeds would rather make an impression on the rollers than the latter on them, unless, indeed, they were much too close together. I found the proper distance to be about a full eighth of an inch. A hopper is so fixed above them as to bring the grapes readily to pass between the rollers. These are turned by two children, and it is so easy a work for them, that they must be continually checked for turning too fast. It is almost incredible what quantity of grapes can be most completely mashed in a short time, by means of this machine. It performs its operation certainly better and more thoroughly than can be done, I think, by any other means. It is most surprising that so obvious simple and convenient a contrivance, should not have been in use generally in Europe for centuries past! At this stage of the process, the quantity of saccharine matter contained in the juice is to be ascertained; for it would be a very useless and uncertain operation, if the fermentation had gone on for some time. This may be done by trying whether an egg will float in it, so as to have a small portion of it out the liquid. Or by an areometer,[14] which is the instrument I use. That of Beaumé for syrup, or that for salts, is the suitable one. The juice of the Madeira grape raises the instrument usually about 10 degrees and it requires about half a pound of good sugar per gallon, supposed to be in the vat, to raise it to 13 degrees or 14 degrees, which is fully enough to make a good and durable wine. Some grapes, the Lenoir, for instance, are richer, and the latter sometimes raises the instrument to 13 degrees full; so that it is sufficiently rich to make a good wine without the addition of any sugar. After the whole has been well stirred in the vat, so as to have completely mixed the sugar with the mashed grapes, some of the must is again taken out and tried with the egg or the areometer, when sugar is again added, if insufficient. If otherwise, the vat is covered with boards and a cloth, and the whole suffered to ferment for one, two, three or more days, according to the temperature and the object in view, and the activity of the fermentation. As the weather is usually hot here at the season of the vintage, I find usually twenty-four

13. Arsenne Thiébaut de Bernéaud, *Manuel théorique et pratique du vigneron français, ou, L'art de cultiver la vigne* (Paris: Roret, Libraire, 1827), 174–83.

14. See note 23 on page 83.

to thirty-six hours sufficient, particularly as the object is not to obtain a highly colored wine, and also for fear a longer fermentation with the marc would extract from it, that is, from the skins, seeds and stems, too much tannin, which might make the wine too astringent, which though very wholesome, is not generally so palatable as a less degree of it. During the time of fermentation in the vat, its contents should be stirred several times, and the top, which has been raised, is to be depressed down into the more liquid part at the bottom. This is deemed necessary, lest the top having immediate access to the air, should become too acid and impair the quality of the wine. I usually stir and push it down twice in about twenty-four hours. The vat being provided with a large cock, two or three inches above its bottom, this serves to draw off all the liquor that will run out without pressure, and it is at once put into the casks ready to receive it. The remaining contents of the vat are then carried to the press to extract all the juice, and this last is either mixed with the former, or is put into separate vessels; for that from the press is more astringent than that which has run freely from the vat. When only a small quantity of wine is made, it is not usual to keep these two qualities separate, as it gives a great deal of additional trouble to have two sets of vessels, the contents of which are to be kept always separate. The casks into which this must is put, (for it is not yet wine,) are not filled by about three or four inches, according to their sizes. The object of this is to allow room for the continued fermentation, and prevent loss by the must running over. The bung holes are then covered by two or three vine leaves and loaded with a double handful of moistened sand. Some, instead of this, use small bags full of sand. Either act as a valve that will rise if the fermentation is violent, and suffer carbonic acid gas to escape. It is yet the opinion of some persons that the casks should be filled up, so that the rising of the froth and other matter excited by the fermentation, should run out of the cask; but the only difference that I could find is, that in the latter case, some of the wine is lost with the foam, &c.,: whereas, by the former process, it settles to the bottom and adds that much to the lees. The fermentation will go on for two or three weeks, decreasing gradually in energy, till at least it is insensible, and is no longer heard by applying the ear to the cask. When this is the case, the casks are to be filled up to within about an inch of the top, and the bung driven in close. In this state great care is to be taken, and the casks visited at first often, about twice a day, lest the fermentation increasing should burst the cask or produce some leaks. The better to guard against this, a gimlet hole is made within an inch or two of the bung, and stopped with a peg that can be loosened and taken out for a moment occasionally, at the frequent visits to the casks. The taking out of this peg for a minute allows the escape of the gas, and precludes all danger. The whole is finally left undisturbed for six or eight weeks, except that the casks are often filled up; for as the fermentation increases the bulk of the liquor, the vessel, which should be kept full, must be filled up when it has subsided. After this, taking advantage of a clear cold day, the wine is to be drawn

off its first lees, and put into other casks which must have undergone a due preparation to receive it. The fumigation with a sulphur match is by no means to be omitted here; for it is then more necessary than at first. Its object is, besides purifying the air contained in the cask, to prevent an undue renewal of the fermentation, to which the wine is liable after being stirred and thus exposed to the atmospheric air. Until this period the must, in its progress to becoming wine, is very harsh and unpalatable, and, to a person not accustomed to it, it would seem that it has spoiled, and never can make good wine. It has now, however, become very pleasant, palatable and wholesome, although its fermentation is not fully completed. It becomes again, at certain periods, as if about to spoil and turn to vinegar; but the owner, or his substitute, need not be alarmed; for it is only produced by a slight renewal of fermentation, which though not otherwise perceptible, has in reality produced this effect, which will have disappeared in a few days, or a week or two, with an evident improvement of the wine. These periods of renewed fermentation are said to be, first when the sap rises in the vine in the spring, second when it is in bloom, and then, when the fruit is acquiring its maturity. Although these are the observations of illiterate men, who attribute to these periodical circumstances of the vine the renewed fermentation of the wine, the fact is true, though the cause must be looked for elsewhere; probably that which affects the vine and that which affects the wine, are the same changes in the temperature of the atmosphere, together with the state of the wine.

The above described manner of making wine is the general practice found on experience from time immemorial. (I must except the addition of sugar, which is not done in Europe, except by very few; and this is probably the reason that their wines vary more in quality, according to the seasons, than would otherwise be the case.) There are, however, many alterations, probably improvements, for the purpose of varying the qualities and properties of the wine. If a highly colored wine is desired, and this is much regarded in France, it is suffered to ferment longer in the vat. The coloring matter is obtained from skins by fermentation, which also extracts from the stems and seeds an astringent principle, which is very manifest in all red wines, and strongly marked in port. This astringency is certainly one of the good qualities of wine, when not in excess. I believe, that for one cask of white wine that is made in France, one thousand of red is produced. Some of the white wines are, however, more pleasant to delicate palates, (I mean generally, for there are many exceptions,) and in some cases, are as wholesome, though their properties are different. The best white wines, if we except a very few of the choicest kinds, are probably those made of black grapes, of which champagne is the most noted.[15] In making these wines, great precautions are necessary to prevent their

15. Pinot Noir.

acquiring any degree of color from the skin. It is according to the process of making champagne, that I make a white wine of my Madeira grape, which is known to a few gentlemen in Baltimore, and to many in South Carolina. The process is as follows: the grapes being fully ripe, and the weather favorable, the gathering commences as early as possible, by day break if practicable, for it ought to be discontinued by the middle of the day, unless the sky is cloudy, for fear the heat of the sun should tinge the juice. They are gathered and picked with uncommon care, so as not to bruise them and leave no rotten berries in the bunches, the finest of which are selected. As fast as the baskets of the gatherers are filled, they are very carefully and gently emptied into the press, if near enough, if not, into tubs to be carried to it by men; taking the utmost precaution lest they should be bruised by either removal, for fear the fermentation should commence and color the must. The grapes are gently arranged by hand in the press, and when it is full, they are pressed down, though not very hard, without their having been previously mashed. The juice thus obtained, has at this time a little color; but this is deposited in the bottom with the lees. It is then put into casks, and treated afterwards in the same manner, as according to the other process above described. Before it is put into the casks, the strength of the must should be tried, and such sugar added as may be needed.[16] In order to have the wine effervesce, it must be carefully excluded from the air as much as practicable, the vessels kept full, bunged very close, and after it has been drawn from its first lees, it should be twice fined with the white of eggs, or isinglass, at short intervals of time, so as to be able to bottle it in March. Very strong bottles should be selected for this purpose; the champagne ones being made for the express purpose, are probably the best. The corks should be of the very best quality, and fastened down with wire, or tied over with bladder, which answers both purpose of wire and wax.

Wine made in this manner is necessarily more costly than according to the other, for three reasons:—much more care and attention are required during the process; it is made of the ripest and most perfect juice; and lastly, because only a portion of it (about one-half) can be obtained by this process; for, on unscrewing the press, it is found that only the ripest berries are broken; all the others, though ripe enough for the usual purpose of making wine, are left entire. The contents of the press have then to be passed through the rollers, or to be otherwise mashed,

16. Because the addition of sugar to the must was not practiced in Europe, it was a controversial technique for regularizing the alcoholic content of wine and smoothing out fermentation. Gideon B. Smith editorialized about this in his column introducing Herbemont's essay: "The addition of sugar to the must is in fact no adulteration of the juice; because saccharine matter being one of the most important elements of wine, the addition of it when deficient in consequence of unfavorable seasons, is merely supplying an element by artificial means that would have been supplied by nature in more favorable circumstances" (384).

and put into the vat with the rest of the crop. This wine, when made with all due care, is nearly colorless, and whether it is made to effervesce, as champagne, or not, is a very delicate and pleasant liquor, not having any of the astringency of colored wines. I have reasons to believe, that under certain circumstances, a small quantity of sugar-candy, about half an ounce per bottle, is added at the time of bottling it. This may add to its briskness, as it does to its taste. It is surprising to observe the difference between this colorless wine and the other made at the same time and with the same grape, the latter being fermented in the vat for twenty-four to thirty-six hours, more or less, as circumstances may require. Those which I make with my Madeira, which is a very suitable grape for the purpose, have apparently no points of resemblance.

Rather than interrupt the description of the usual process of making wine, I have not inserted in its proper place, a subject on which writers as well as practical men, do not yet agree. It is whether it is best to separate the berries from the stems, or to leave these and ferment the whole together. It is very probably that in this, as on most subjects of difference, both sides are right in particular circumstances. The advocates for stemming the grape, say, that by this operation, the wine is more delicate, and has none of the roughness imparted to it by the stems in the other mode of proceeding, and that the skins and seeds are sufficient to give it a due degree of astringency. The other party say, that the wine fermented with the stems is much more durable, and that its roughness disappears in a great degree as the wine acquires age, and the greater quantity of tannin which it has acquired from the stems, and which produces its astringency, renders it a more tonic and wholesome wine, as well as a more durable one. Both are certainly correct to a certain extent, and where the grapes acquire a sufficient richness to make a desirable wine without the stems, as is generally the case in warm countries, it is certainly more pleasant to the taste, and where the grapes are deficient, the stems are properly left to add the very desirable quality of durability to it.[17] When, therefore, it is desirable to stem the grapes, it is well to be informed of the speediest manner of doing it. Of the various ways which I have read of and tried, the following appears to me entitled to the preference. The grapes are thrown into a box, the bottom of which is made of canes, or narrow strips of wood, crossing each other so as to leave open squares of about three-fourths of an inch. This box being placed over a small vat or large tub, hogshead, or the like, the grapes are rubbed by hand hard against the bottom, by which means the berries fall through. The stems being well shaken, are thrown into an empty vessel ready to receive them. These may be afterwards mashed and help to fill the vinegar cask. Some considerable time will be saved,

17. The decision to include stems remains a living controversy in oenology. Whole cluster fermentation (with stems) is frequently practiced by cultivators of Pinot Noir grapes. Yet there is a school of wine making that finds the stems imparting a disagreeable herbal note in taste. If stems are included, they should be mature, dark colored, with no greenness to them.

when the grapes are stemmed by placing the riddle or stemming box over the hopper of the rollers; for the berries, though a good deal mashed and bruised by the operation of stemming, are not sufficiently so. This operation adds a great deal to the time and trouble, at a season when both are precious.

It will perhaps be objected to my process of making wine, that, as I add some sugar to it, it is not the pure juice of the grape. True; but if the fruit is not sufficiently rich in saccharine matter, it seems to me allowable to supply the deficiency.[18] It has been observed before, that the grapes of old vines are richer than those of young ones. The deficiency of sugar is therefore correcting itself gradually every year. Besides this, some seasons being very wet and cool, do not produce as rich a fruit as more dry and hot ones do; and it is well to know how to remedy the defect. Some persons recommend to supply the deficiency by the addition of brandy, which, I think, is objectionable—unless, perhaps, it be added before fermentation, when it is possible a chemical mixture may be the consequence; whereas, if it be added after the fermentation is over, the mixture is only mechanical. Whether it is prejudice in me or not, I think it is always injurious to the wine to add brandy to it unless it be done at the beginning of the process; and a great deal of it is probably evaporated during the fermentation. My little experience tells me, that spirits, either mixed with water or with wine, attack the nerves, and are productive of many disastrous consequences to health, destroying the tone of the stomach, &c. I have always been of the opinion that brandy is never added to wine in France, unless it be to prepare it and make it suitable for certain markets abroad. I never have read any book, or seen any person having any knowledge on the subject, but denied stoutly such addition being made for home consumption, until very lately, when I read in the "Manual of a Wine Drinker,"[19] (a new book,) that, in the neighborhood of Bordeaux, a certain kind of spirit, called "trois-six,"[20] is put into the wine in specified quantities; and about the same time I saw a lady who is the owner of vineyards in that country, who avowed the same thing. What "trois-six" is, it is not possible for me to say from the name; but I presume it is alcohol, of a certain degree of strength. Be this as it may, I am satisfied it is only a recent practice in France, and I doubt its extension beyond the country where it is said to be adopted. Whether the practice is good or bad, I have no experience to determine; but it is very possible that the preference is given in that country to spirit over sugar, because the latter is more dearer than the former, in proportion to its effect.

There are various other processes of making wines of particular qualities, and in certain districts; but, as I am not practically acquainted with them, I shall only

18. The preference for old vine grapes has become cultic among vintners working with Zinfandel.

19. A title not listed in WorldCat in English or in French for the early 1830s.

20. Now manufactured in Normandy, this alcoholic concoction entails "Trois mesures d'alcool et trois mesures d'eau" and three measures of sugar.

notice them very briefly. In places where they wish to make a strong wine, without the addition of either sugar or brandy, they reduce the must by boiling,—evaporating a quantity of its water,—whereby the proportion of the saccharine matter to the liquor is increased.[21] Others attain the same object by laying the very ripe grapes on an extensive floor of straw; so that they dry almost to raisins. The great objection to either of these modes of proceeding, in a country of beginners, is, that the quantity of wine made is thereby considerably diminished, and we naturally enough aim at quantity as well as quality, and it appears to me more economical, to supply the deficiency of sugar, by sugar itself, than to do it by evaporating part of the liquor.

There is another subject, intimately connected with wine making, which I have not yet noticed. It is the cellar. A good cellar—one calculated to keep light and delicate wines—ought to be so deep that no change of temperature is experienced in it throughout the year. It should also be rather dry than damp; for too much moisture is injurious to the casks. If I had such a cellar, I could easily make and keep wine without sugar; but in such as we have here,—dug only one, two or three feet deep, and merely covered by the floor of the house over it—such wine would probably be too often affected by the changes of temperature, to resist long. I have seen champagne upwards of thirty years old, that had been kept in a cellar at least twenty-five feet deep, and it was as brisk as if it had been two or three years old. We have then, as yet, no chance of getting accustomed to the use of very light wines, which are gentle in their effects, tonic, exhilarating, and not producing intoxication, unless drank to a very great excess; and even then, the consequences of intoxication, by such wine, are not as injurious as that produced by the stronger ones. If, however, intoxication is the object, it is much more readily obtained by brandy itself, without resorting to the farce of drinking it mixed with wine and calling it exclusively by the latter name.

Where they have good and deep cellars, it is not usual to put the wine into them before it has been drawn off its first lees; but it is kept until that time in what is called a 'celier,' which corresponds more with our cellars here. A good cellar, then, should be twenty-five or thirty feet below the surface of the ground, vaulted with stone or brick, and have apertures leading to the external air. Wine, in good casks well filled, or still better, in good bottles filled to very near the cork—about three-quarters of an inch at most—well corked and waxed, and kept in a cellar where there is no light, or any change of temperature, must, if it were sound when put in, remain sound for many years, though it be not a very strong wine.

I have, sir, given you a very diffuse and prolix account of the culture of the vine and of the making of wine, in compliance to Pomonkey's and your wishes. I hope, however, it will be

21. An ancient practice described in Virgil's *Georgics* 1, line 296.

found sufficiently intelligible, and that your readers will be able to separate the wheat from the abundant chaff.

I am, sir, very respectfully, your obedient servant,

N. HERBEMONT

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Requisites for Success in Grape Cultivation

January 22, 1820

When John Stuart Skinner began publication of the *American Farmer* in April 1819, the United States for the first time possessed a periodical exclusively devoted to the arts of agriculture and horticulture. Herbemont, as director of the board of the Agriculture Society of South Carolina, reckoned himself one of the persons for whom the journal was intended as a forum. One topic taken up during the weekly's first year of publication was the problem of grape culture. In volume 1, issues number 34 through 41, Skinner reprinted "On the Grape Vine, with its Wines, Brandies, Salt and Dried Fruits," by "A Friend to the National Industry" first published in the *Philadelphia National Intelligencer*. In this opening contribution to the agricultural press, Herbemont commended the editor for his concern for the vine, and assumed what would become a favored role, that of an experimentalist testing the recommended procedures of other cultivators. Curiously, the technique for preparing vine cuttings for rooting that Herbemont reviewed had not appeared in the pages of the *American Farmer* but in the irregularly issued *Memoirs of the Philadelphia Society for Promoting Agriculture*. Herbemont's letter appeared in the *American Farmer* 1, no. 45 (February 1820): 363–64.

Propagating the Grape Vine.

Columbia, S.C. Jan 22nd, 1820

Mr. Skinner:

The various and very interesting articles on the grape vine, &c. which have appeared lately in your valuable publication the *American Farmer*, will, no doubt, open the eyes of many gentlemen in the United States, and particularly in the southern ones, on this very profitable branch of agriculture. Many difficulties in the cultivation of the vines have certainly occurred, which have deterred many persons from the prosecution of experiments they had begun, and some are not

wanting who positively affirm that the grape vine can never be cultivated with success in this country. This plant requires a very particular management, and I have no doubt that the repeated failures ought to be attributed to the want of skill in those who have attempted its cultivation. We are also told that several Europeans, who in their own countries had cultivated the vine with success, failed here in the attempt. I am ready to admit the truth of this but it must be observed that differences in the soils and climate, and other circumstances which pertain to a new country like this, require not only the skill of other countries, but also judgment to investigating the causes of failure, and adapt the mode of culture to the particularities of the country in which it is to be carried on. It also requires some considerable degree of acumen, to discriminate what are the fundamental principles relative to the cultivation of that plant and which ought to serve as a basis in the culture, wherever it is attempted, from mere local practices, which, though perhaps good where they are pursued, arose, from particular circumstances in the soil, climate, &c. It is most undoubtedly true that every district or country of Europe and, no doubt, elsewhere, has something different in their mode of treating the vine. This accounts for the great diversity in the accounts we have in books on the object, as to the cultivation of the vine. All these methods may be correct for particular circumstances; but must be very wide of a plan of universal practice. Such a plan I do not hope ever to see; we can only hope to have a few leading principles which may serve as a basis for all; but the superstructure may be in many instances widely different. If our government, or some of our patriotic agricultural societies would send a proper person to Europe for the purpose of inquiring into the different modes of cultivating the vine in that country, no doubt from the great mass of information thus collected, a very judicious person might frame a tolerable system, somewhat general in its application, and showing causes for such deviations from this or that practice, that would most probably lead us to success.

It is unnecessary here to show the very many and great advantages, that would result to this country from the culture of this invaluable plant. They are innumerable in a political, commercial and moral point of view. I say moral, because it is acknowledged that the vice of drunkenness is much less frequent in wine countries, than in others where the use of spirits is resorted to. We must confess that it is a vice that defaces horridly the fair features of this country. I leave, however, this subject to abler pens. Would to God that men of talents would undertake to represent this in a proper light.

Notwithstanding the difficulties we have here to encounter in our experiments, we ought to persevere, and, no doubt, some of us will succeed, and will communicate to the public the results of their experience.

This is the season when preparations for planting are made, and I hope I will not be thought presumptuous, if I give an account of an experiment which I made last year, and which succeeded fully to my satisfaction.

On looking in the 3d vol. of the *Memoirs of the Philadelphia Society for promoting Agriculture*,[1] 1st page, I saw a very interesting article signed T. Matlack,[2] giving an account of a speedy mode of propagating the grape vine. It is thus: "Take a single joint of the vine you chose, cut it off at half an inch above the eye, cover each end with a sticking plaster of any kind, and set it in a pot of garden mould: the eye of the cutting must be covered with earth, and then watered to settle the ground; after this lay half an inch of horse dung on the surface to keep it from becoming dry and hard. Place your pot in your hot bed, etc. If it be inquired why a single eye is recommend, rather than a cutting of sixteen inches long, it is replied, that the roots shooting from a single eye, are exclusively from itself, and much the strongest and strike more directly downward; the shoot from it has less pith in it, the wood is firmer and shorter jointed, and comes sooner into full bearing; and it appears to be a much more healthy vine. And to these advantages may be truly added, that a thousand plants fit to set out may be raised from the single eye with less labour and within less space, than a hundred plants can be raised from long cuttings, which have not, that I know of, one single advantage in their favour; and in a new country it is of no small consideration, that the same cutting will produce five times the number of plants."

Now in following Mr. Matlack's direction, the most enormous number of pots required renders his plan impracticable. I have therefore tried to do without them, as in the following concise account. I cut my vine without much regard to having only about half an inch above the bud, but cut them about half way between two of them, except when the point was very short, I left it rather longer below the bud than above it. I then made a mixture of about two parts of resin and one part of beeswax, and when they were melted and mixed, I dipt both ends of my cuttings into it which perfectly closed them. I then made choice of land somewhat moist, and after having prepared it well, laid my cuttings an inch deep, about ten inches apart, in rows three feet from each other, I then, according to the direction given by Mr. Matlack, strewed a little horse dung on the rows, and let them remain so till the weather began to be warm and dry. In South Carolina the spring is generally very dry, and at the time if great care is not taken of cuttings of every kind, the drought will surely dry up the young and tender roots of my cutting. To prevent this I covered the rows with moss, which had the desired effect, and my cuttings grew remarkably well. They attained in the course of the summer the height of

1. The Philadelphia Society for Promoting Agriculture was the second such state association formed in the wake of the American Revolution, with the South Carolina Agricultural Society of Charleston first. Both were organized in 1785. *Memoirs of the Philadelphia Society for Promoting Agriculture* (Philadelphia: Johnson & Warner) were published irregularly, beginning in 1808. Volume 3 appeared in 1814.

2. Timothy Matlack (1736–1829), a Quaker merchant and brewer who engrossed the Declaration of Independence, fought, despite his religion, at the battle of Trenton, presided over the court martial of Benedict Arnold, and served as secretary of the American Philosophical Society from 1781 to 1783.

three or four feet, and when I took them up about ten days since to transplant them where they are to remain, I was surprised to see what beautiful roots they had. I was so well pleased with this first trial, that I am now preparing a considerable quantity of cuttings in the same way. With respect to Mr. Matlack's mode of pruning, it appears to me very good, and according to principles that may be correct, but I have not tested it. All I can say of this subject is, that of all the Europeans I have seen that understood the management of vines, not one pays the smallest attention to cutting only above a clasper, and they generally leave for one shoot of four or five buds, one below it with only one or two buds, at most, which they expect will give them five shoots for the next year's pruning. The buds here left are of course below the claspers.

I beg you will look upon this as merely an exhibition of desire to throw in my mite of information; but if it be not worthy of publication, I do not object to your throwing it into the fire.

I am, Sir, &c.

N. H.

Acculturation of French Vines.

December 6, 1822

In autumn 1822 Nicholas Herbemont sent John S. Skinner, editor of the *American Farmer*, a copy of his tract *Observations on the Late Occurrences in Charleston by a Member of the Board of Public Works*, which Skinner reprinted in *American Farmer* 4, no. 35 (November 22, 1822), 274–76. A portion of the tract recommended silk production as a means of developing the Carolina midlands. Skinner replied on November 19, 1822, by shipping a sample of New England silk and a request for information about Herbemont's trip to France collecting vines for transplantation to South Carolina. This venture proved to be one of the great disappointments of Herbemont's life. The resolve to go to France formed before January 1819 and can be detected in the notice Herbemont penned of the formation of the Agricultural Society of South Carolina, published in the pages of *American Farmer* 1 (1820), 354–56. The second of the four guiding purposes of the society was "to introduce from foreign countries such articles, the cultivation of which is likely to be advantageous to the state." At his own expense, Herbemont sailed to the country of his birth in autumn 1821, intent on securing cuttings of the most highly regarded grape varieties. This letter narrates the results of that expedition. Characteristically, Herbemont did not let disappointment monopolize his reflections and included an encouraging report on a strain of millet he had put into cultivation. The letter was published in *American Farmer* 4, no. 41 (January 3, 1823): 326–27.

Silk—Millet—Peas—Culture of Grapes—and Fabrication of Wine.

Columbia, S.C. Dec. 6th 1822

JOHN S. SKINNER, ESQ.

Dear Sir,—I have received your obliging letter of the 19th ult. containing a sample of Silk made in New England, and exhibited at the Brighton Show.[1] The silk is very

1. Brighton, Massachusetts, agricultural fair. For the cultural influence of these exhibitions, see Catherine E. Kelly, "'The Consummation of Rural Prosperity and Happiness': New England Agricul-

fine, even strong, and of a beautiful colour. If such can be made so far North, what greater success have we not a right to expect in the Southern states. I have also received the Chili Peas and Beans, you were so obliging as to send me, for which I am much obliged.

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You request "that I inform you of the fate of the Grape vines I brought from France." That you may know, more fully, the reasons of my bad success with them, I shall state all the facts connected with their importation. Thinking it desirable to have a great variety of vines for experiment, that I might select those that seemed best suited to our soil and climate, I, while in Paris, procured a letter of recommendation to the Minister of the Interior,[2] for the purpose of begging the favour of a supply of vine cuttings from the Royal nurseries. The Minister very obligingly gave me a letter for Mr. Bosc Intendant of the Royal Nurseries,[3] requesting him to furnish me with all the vines I might wish to have, that were in the extensive collection under his superintendance. In this latter gentleman, I also found a person much disposed to do every thing in his power that might be advantageous to the United States, and particularly to the State of South Carolina, where he had formerly resided some time, and had been very hospitably treated. The time of departure from France being near at hand, I called upon him and requested that the vines might be got ready for me in a few days, to which he objected, as the season (October,) was not sufficiently advanced to allow the cutting of the vines with safety; and promised to send them to Havre by the 10th of November, which he did very punctually. Owing, however, to the heavy tonnage duties laid reciprocally on the ships of the Americas and French nations, I found it difficult to procure a passage to any of the Southern ports, and, lest I should be detained in France much longer than it was convenient to me, I sailed a few days before the arrival of the grape vines. They were, therefore, left at Havre until the opportunity offered; and by the time I received them in Columbia, which was the last of April, they had been cut nearly six months, and they appeared so dry that I scarcely expected one of them would grow. I planted them all, however, and out of 264 different kinds, only 40 vegetated at all, and the greatest number of these so feebly that I have only 10 or 12 of them alive at present. These, with about the same number which I had

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tural Fairs and the Construction of Class and Gender, 1810–1860," *American Quarterly* 49, no. 3 (September 1997), 574–602

2. Joseph-Jérôme, comte Siméon.

3. Louis-Augustin Guillaume Bosc d'Antic, while serving as French consul to Wilmington in 1797, resided some time in Charleston, South Carolina, and toured the Lowcountry. After 1803 he supervised the national gardens and the seedbeds of Versailles.

before, make yet a tolerable collection.[4] It is a subject of much regret to me that this great and doubtless very valuable collection, probably the greatest ever imported to the United States, should have thus almost totally faded from circumstances not within my control. It can scarcely be doubted, that in this great number of kinds, several would have been found very suitable to our climate, and have proved ultimately a most important object in our Southern States.[5]

The little experiment which I have undertaken in our Sand-hills,[6] has been considerably neglected, in consequence of my having been engaged in other and dissimilar objects, and I have not a man to whom I can confide the cultivation of the vine. It progresses nevertheless, and promises full success.

I have several vines of Scuppernong in my garden, which is a very dry spot, and although they grow well, they bear but indifferently. From their appearance, I presume they are found naturally in rich damp soils, like the common Bullace,[7] of which it is evidently a variety. I intend to try them in a suitable soil. It is certainly a grape, of which a rich wine can undoubtedly be made, by persons that understand the process well. I have tasted some that would have been very good, had it not been poisoned with apple or peach brandy. It appears to me a very strange notion, which most people have in this country, that wine cannot be made without some brandy being put into it. Were they to suffer the grapes, after they are fully ripe and washed to ferment to a proper degree, there is no doubt but the wine would be improved in quality, and that it would keep perfectly well, without the addition of spirits. A little reflection would satisfy any person, that if brandy was absolutely necessary for the making of wine, the antients who knew nothing of distilling,[8] could never have made wine, and we know very well that they not only made wines in quantities, but also kept them longer than any, I believe, ever kept in this time, as we have accounts of wine being kept by them upwards of one hundred years. I have drank Champaigne that was thirty-four years old, and it is well known that this kind of wine is as delicate as any. It was kept in a deep cellar, as all delicate wines ought to be kept. Wine that is bottled properly and kept in a cellar, deep enough to prevent any exposure to a change of temperature may probably be

4. He would continue to secure *Vitis vinifera* vines through the next two decades and had approximately sixty under cultivation at the time of his death, yet he never cultivated substantial quantities of these vines and never managed more than batch production of wine from them.

5. Peter Legaux's collection of French cuttings for his attempted national vineyard at Springmill, Pennsylvania, in the 1790s, had similar breadth.

6. His vineyard at "Palmyra" on Eightmile Branch, Richland County, South Carolina.

7. *Vitis rotundifolia*, or Muscadine grapes. They do not grow in clusters and ripen at different times, making them difficult fruit to process for wine.

8. Schooled in a history that gave Frenchman Arnaud de Villeneuve credit for inventing the process in 1250, Herbemont did not realize the ancient Egyptians, Greeks, and Romans all distilled alcohol for perfumes and medicines.

kept for any length of time. The proper way of bottling wine, and I presume cider, or any other vinous liquor, is to fill the bottle so that there be as little air as possible contained between the wine and the cork, taking care, however, that the bottle is not so full as to break by driving in the cork, and to lay the bottle on its side, so that the cork will be constantly wet. Brandy or any other kind of spirit is not in any wise necessary, unless it be to suit the taste of particular persons.

I am, truly, with respect, Dear Sir, your obedient servant.

N. Herbemont

On the Culture of the Grape.

August 20, 1826

Nicholas Herbemont's experiences with grapes in Pennsylvania and South Carolina convinced him that the traditions of cultivation practiced in France had to be altered in North America if viticulture would succeed. The growing conditions—the soil, the climate, the insect and animal predators, the diseases—differed so markedly in the United States from those in most of the French wine regions that a different way of growing things had to be devised. Practice pushed Herbemont to new ways of doing things. He began in the 1810s by replicating the best accepted practice of the old world; when it failed, he devised his own procedures, consequently forming an American way of grape culture. The impetus to publish elements of this new practice came in 1826. The *American Farmer* had published in September 1825 "On the Cultivation of the Vine" by the Swiss viticulturist Brun-Chappuis,[1] supplying a readable summary account of European grape culture and wine making by an expert from Vevey, that canton from which John James Dufour, the Indiana winemaker, hailed. Then, in May 1826, *American Farmer* reprinted from the *Southern Recorder* the reflections of Thomas McCall, a planter from Laurens County, Georgia, on wine making.[2] Both writings in Herbemont's eyes required correction. Brun-Chappuis's advice about the proper height for training vines provoked this letter on the ideal trellis height for American grape cultivation. His subsequent letter on wine making critiqued features of McCall's method of making wine. Taken together, Herbemont's two letters comprise his first attempt to summarize the whole process of viticulture, and can be read as the initial draft of a narrative he would refashion and elaborate several times throughout the next decade. Published in *American Farmer* 8, no. 25 (September 8, 1826): 195–96.

1. "On the Cultivation of the Vine. By Mr. Brun-Chappuis, of Vevey," *American Farmer* 7, no. 25 (September 9, 1825), 196–97; 7, no. 26 (September 16, 1825), 204–6. "Translated for the American Farmer, from late numbers of the 'Bulletin des Sciences.'"

2. Thomas McCall, "On the Culture of the Grape Vine and the Making of Wine," *American Farmer* 8, no. 9 (May 19, 1826), 69–70; 8, no. 10 (May 26, 1826), 77–78; 8, no. 11 (June 2, 1826), 82–83.

Columbia, S.C., Aug. 20, 1826

J. S. Skinner, Esq.

Sir., Having promised you, or rather threatened you, with a communication on the subject of the grape, I must keep my word, at the risk of only saying what most people know already, and of being blamed by "An Old Man" (your late correspondent,) for writing as if I thought the farmers and planters of this country were still learning the A, B, C, of agriculture. And, in truth, many have not gone much further in the rudiments of it as a science. I hope, however, I shall not be accused of this, particularly as the branch of which I treat, according to my little stock of experience, is not generally understood in this country; and the experience and practice of other countries, however valuable they may be, are not to be absolutely relied on, and implicitly followed in this. I shall instance one which is of some importance, and it is this: that in France it is considered as an indisputable fact, almost an axiom in the culture of the vine and the art of making wine, that to make good wine the grapes must be raised as near the ground as possible, so that they do not touch it, and that grapes raised higher, even only two or three feet, make comparatively an inferior wine. This is very true there, especially in the north and middle of France; and they, therefore, very seldom have their vines more than four or five feet high altogether, the bearing part of them being within one foot of the ground, and sometimes nearer. They need this, that the heat reflected from the earth may sufficiently mature their grapes. Here, the great ardour of our summer's sun, renders this additional heat not only unnecessary, but very frequently hurtful. Certain it is, that after an experience of fifteen years or upwards, the consequence of almost unremitted experiments during all that time, my grapes never have done well as long as I aimed at having them low. I say aimed; for I could not succeed in restraining the vigour of their growth, notwithstanding all my endeavours to this effect. I have then been obliged to give up the low vines, and to train them higher, about six or seven feet, spreading them fan fashion. They did a little better, but not so as to satisfy me. In short, after having tried a variety of devices, I finally trained my vines with a naked stem seven or eight feet high, and then led the bearing branches horizontally overhead. I had long before thought of adopting this mode, but was deterred from it on account of its expensiveness. The frames required to support the vines in this manner cost much more than in any other way; but by making them of good materials, they will last, I hope, several years, perhaps eight or ten. So that it may be the cheapest ultimately. I made use of split lightwood,[3] about the size of common fence rails, for posts, which were placed ten feet one way by seven feet the other, and joined them at the top by long sawed laths, three inches wide and one and a half inch thick, covering the spare spaces between them with sticks and poles, with intervals between them of about eighteen inches or two

3. Southern usage: resinous pine, often used to kindle fires.

feet, so as to form a kind of trellis over head. Another reason, also, that weighed with me considerably, is the greater inconvenience of working at the vines when they are raised so high. The advantages, however, were found to preponderate. The vines certainly bear more fruit. The grapes hang loosely, and, as it were, detached, on the underpart of the ceiling. They are sheltered by the leaves from the burning heat of the sun, and the sides having neither leaves nor fruit, allow a free circulation of air beneath, and I think prevent the bad effects of the hot steam that sometimes arises from the earth and causes the grapes to rot by scalding the skin. There is another advantage; which is, that the birds cannot get at them so easily; whether it is that they do not see them, or can find no place to perch upon, so as to eat them at their ease, certain it is that they do not commit one fourth the depredation on them when thus hanging under the cover of the leaves; than when they are differently exposed.

It requires at least six or seven years from the time of planting the cuttings, for the vines to have acquired strength and thickness sufficiently to be trained to this height; for this must be done gradually; or else one would run the risk of having the bodies of the vines too slender and too weak to do well. They will bear fruit, notwithstanding, every year from the third; but the vines will not be fully formed till the sixth or seventh.

When trained in this manner, the vines must not be planted as near each other as when kept lower. I think ten feet one way by seven or eight the other, will do very well;[4] and even if the soil is good, the distance may be increased with advantage. That there may be no loss in the use of the ground, I would recommend to plant the vines much closer at first, and dig up, occasionally, the weakest of them to make room for the best, as they grow large and require more space.

It may not be amiss to say something here as to the manner of planting cuttings, so as to insure their success; though this has been said and repeated in your valuable "American Farmer," and elsewhere. Good cuttings having been well selected. They must be of the preceding year's growth, the wood being well matured; and the best are those that have a few inches of the old, or two years old wood, though the next cut of a strong vine is also very good; have holes dug about eighteen inches deep and two feet square, or more, (the larger the holes the better—I have even thought it best to make a continuous trench of that depth two feet wide and the whole length of the row,) return into the bottom a part of the surface vegetable earth, which must for this purpose have been put on one side of the hole or trench; and on this place your cuttings a little sloping, and fill up the hole with the remainder of the vegetable earth; and as the quantity of it dug out may not be sufficient, rake up in the vicinity a sufficient quantity to answer your purpose,

4. Standard rows now tend to be spaced six feet apart, although in the South a wide spacing of nine feet is not uncommon.

leaving the earth around the planted cuttings rather higher than the general level of the ground. As you fill in the earth, press it gently against the cutting, but not too hard. The cutting so planted had better have but one bud out of the ground provided it be a good one. The proper length for cuttings is about two feet. In our Southern states, I would recommend to plant in the fall, the sooner after the cuttings have been separated from the vines the better. They will do, however, planted any time until March during mild weather. As soon as you have your cuttings, if you are not ready to plant them, bury them entirely in the ground, or keep them in the cool cellar; but the burying of them is the best. Although I have known vine cuttings to grow after having been separated from the vines six months, and that without having been buried or protected by any covering, other than the bundles of them being deposited in a warehouse and in the hold of a ship, I have always found them to succeed much better when they had not been exposed, even one night, to the frost. After the cuttings have been planted as above directed, it will conduce to their success to cover with earth the bud left out to grow, making a little hillock over it to protect it from the frost; and when vegetating weather comes on in the spring, uncover it gently, and should you have reason to fear a frost after the bud has pushed, cover it gently again with earth, and uncover it when the danger is past. In doing this, great care must be taken lest the bud or young shoot be broken off in covering, and particularly in uncovering it. Grape cuttings will sometimes do well without all these precautions; but a little trouble taken at first may save a great deal afterwards. Indeed, in every thing we do, we ought to recollect this maxim, that "what is worth doing at all, is worth the doing it well." It is a very good plan when you plant your cuttings, if you have enough of them, to plant two near each other, where you intend having only one; but plant them so that the lower ends diverge from each other, the tops being a few inches apart, thus.

If both grow, one of them may be taken up, at a proper time, and planted elsewhere. Suffer only one shoot to grow from each cutting, and fasten them upright to small stakes, stuck by them for this purpose. In putting the stakes in the ground to support the young vines, have the precaution to put them on the back of them; that is, on the side opposite to the sloping of the plants, that the stakes may not injure the tender roots.

The grape vine will grow in almost all kinds of soils; but they will do best in a light sandy soil, dry, and of such a degree of fertility as to produce from eight to fifteen bushels of corn per acre; though it will grow, thrive and do tolerably well even in poorer soil. The situation ought to be selected high, airy, and with a gentle slope facing the east or south; but they will do well in any exposition in this climate.

If it be true (and of this there cannot be any doubt,) that a poor, light, sandy soil will produce not only good wine, but an abundance of it, what excuse can we, of the Southern states, have for suffering *millions of acres* of land to lie idle, despised and uncultivated?[5] We pay every year large sums of money for wines and brandies brought from foreign countries, when we can make as good, and perhaps better at home, at a much cheaper rate. It cannot be that we think it not worth while to add to our present white population, a laborious, industrious and honest set of people, which is almost always the character of industrious cultivators of the soil; and there are millions of such individuals in France, Germany, and Italy, who would come and cultivate our neglected sandy lands, if they had the means of leaving their country, and knew how and where to find us. This view of the subject gives rise to many reflections and most serious thoughts on the present and prospective situation of our Southern states, and we may find, when perhaps it is too late, that our security might have been affected by inducing such an increase of population as is here contemplated.

There is now no doubt of success, and I have this year made upwards of 150 gallons of wine on about half an acre of land, which, if planted in corn, would not in a common year produce more than seven or eight bushels per acre, and would not this year have produced five bushels, with the care and cultivation that could have been bestowed upon it. The wine thus made will not only be good, but *very good*—better, probably, than nine tenths of the wines imported into this country.[6] I am well aware that the above assertion will draw upon me the incredulity of some and the sneers of many; but neither the incredulity of the one nor the sneers of the other, can prevent a fact from being a fact; and it is easier to deny an assertion than to prove its fallacy.[7]

The present season has been very favourable to the vines, except in the spring, when late frosts did so much injury that, but for the immense resources of this climate, the vines would have produced but little, or rather no fruit. Such frosts in Europe, particularly in the North, would have destroyed all hopes of a crop for the year, and no doubt my crop would have been much greater but for this. In order that the manner of repairing the injury done by the spring frosts may be understood, it must be observed that the upper buds of the vine are always the first to grow, except sometimes suckers from the root, which ought always to be

5. Herbemont calculated the improvable waste land in Carolina at five million acres in his 1822 tract, *Observations on the Late Occurrences in Charleston*.

6. Perhaps the most distinctive feature of Herbemont's wine making was his resolute pursuit of quality in his vintages—"bouquet," was his term. With a palate formed in France during his youth, he aspired to create a luscious glass. If we are to judge by the opinions of his contemporaries, his wine ranked even higher than the 90th percentile of the imported product available in the 1820s.

7. Herbemont's conviction about the quality of his vintages probably drove his program of donating bottles to various groups of vignerons and gourmands in the late 1820s and 1830s. Their published testimonies confirmed his boasts.

broken off, unless wanted very particularly; and if nothing injures them, the buds below the two or three upper ones, will either not push at all, or make but slender shoots. After, then, the apparent almost total destruction of my vines by the frost, I determined to prune them over again, and I amputated, without any hesitation, every part that had been in the least touched with the frost. The rising sap followed the knife every where, and the bleeding of the vines was enough to frighten any one but a bold and experienced *surgeon*. This bleeding, most abundant as it was, did little or no injury, and it stopped after a few days. The buds that were left and had now become the upper ones, supplied the places of those that had been cut off, they pushed and bore a plenty of fruit, which the favourable season brought to an early and perfect maturity.

Although I must attribute in a great measure to the severe drought of this summer, my success, as the grapes had scarcely any rot at all, I have reasons to believe that the manner of training them conduced also to this valuable exemption.[8] I have also reason to believe that the rot of the grapes decreases as the vines grow older, and they also acquire by the age of the vines a superior degree of richness of juice, and a more perfect maturity.

Whether or not it would be fit for the legislatures of the Southern states to promote, by some efficacious means, a culture that promises so many advantages, is a question that may be worth examining. The discussion of it can do no harm, and may be productive of much good. I make no hesitation in giving it as my opinion, humble though it be, that it would be perfectly proper, and that few acts of our legislatures could have so direct a tendency to secure the prosperity, peace, wealth and respectability of the countries under their legislation, as that which would give great value to lands within their limits, that now possess none; as that which would give us a hardy, industrious and honest population, where we are so miserably deficient; as that which would increase the revenues of the states, by increasing their valuable productions; as that which would preserve in the country the vast sums of money annually sent abroad; as that which would have most undoubtedly a tendency to render every class of our population more moral, more healthy, and of course more happy? In short, by what act could our legislatures secure our tranquility at home, by stifling in its very germs any disturbance in a certain part of our present population, secure and tighten the bands that unite the United States together, for our strength at home would prevent the intermeddling in our domestic concerns of our well-meaning, perhaps, though *very dangerous friends* at the North?[9]

8. Because air circulation contributes to the evaporation of the moisture that encourages black rot, this assessment is accurate.

9. Herbemont perceived a growing rift in the interests of the various sections of the United States, with the North seeking to advance its manufactories, at the expense of the agricultural South, through

To the cultivation of the vine I would add, to promote the same valuable ends, the cultivation of madder, silk, wool and olives, for the production of which very profitable articles, this same tract of almost deserted country is eminently adapted.[10]

How is this to be done? Induce the removal to this country of the suitable labourers from Europe; show them the way to our shores, and make it worth their while to settle among us. Very small advantages to them will be sufficient.

The above, which are no more than hints, deserve to be examined seriously, and more fully commented upon by one better qualified than the subscriber, who may, for his pains be called a visionary man. If he labours under a delusion, it is produced by a true and sincere wish to promote the permanent advantage of his adopted country, by which he would be benefited in common with the rest of his fellow citizens, and to do all in his power to advance the same laudable objects.

N. Herbemont

the imposition of excise taxes on transatlantic trade. For a true believer in agricultural civilization, the North's program was tantamount to commercial warfare

10. This was the thesis of his *Observations on the Late Occurrences in Charleston* (Columbia, 1822).

On the Use of Sugar in Making Wine.

August 27, 1826

In the *American Farmer* 6, no. 47 (February 11, 1823), Thomas McCall of Dublin, Georgia, published a letter detailing his method of making wine addressed to John Adlum of Maryland, the pioneer vintner and Revolutionary War veteran. McCall began experimenting with wine in 1816; he "pressed the juice, and made no additions of sugar or brandy; the wine was vapid, and tart, like Rhenish wine." The letter chronicled experiments over several years to correct the vapidity of wine made simply from the juice of the grape. He argued for the extensive use of sugar to regularize the fermentation and strength of vintages. In 1826, after further experimentation, he published in the *Southern Recorder* a summary account of his method of sugaring the must. It came to Herbemont's attention when reprinted in three successive issues of the *American Farmer* in September 1826.[1] The extent of McCall's dependence on sugar surprised Herbemont and provoked this letter questioning the practice. McCall possessed one of the bold personalities of his age.[2] Brusque, patrician, and opinionated, he was the agricultural oracle of the Georgia pinelands. To forestall a pugnacious rejoinder, Herbemont presented himself as a scientific experimentalist reporting his findings after replicating McCall's procedures. While McCall inspired respect in Herbemont for his experimental method, Adlum, the guru on wine in the pages of the *American Farmer* from 1823 to 1826, struck the Frenchman as a braggart. Published in *American Farmer* 8, no. 26 (September 15, 1826): 202–3.

1. Thomas McCall, "One the Culture of the Grape Vine and the Making of Wine," *American Farmer* 8, no. 9 (May 19, 1826), 69–70; 8, no. 10 (May 26, 1826), 77–78; 8, no. 11 (June 2, 1826), 82–83.

2. Born in North Carolina in 1764, son of the regulator James McCall, he moved with his family to the Calhoun settlement in South Carolina. Col. James McCall, after an active career as an officer in the Revolution, died of wounds and disease in 1781. Thomas and his brother, the historian of Georgia, Hugh McCall, rose into prominence through public service and arms. Thomas Chase of Maryland first interested McCall in viticulture. He and his friend Gen. David Blackshear were the two avid devotees of the grape in the state during the first decades of the nineteenth century. Thomas McCall, "Memoir of the McCall Family," in William J. Northen, *Men of Mark in Georgia* (Atlanta: Caldwell, 1907), 236–38.

Columbia, S.C., Aug. 27, 1826

J. S. Skinner, Esq.

Sir—Having in my last communication of the 20th inst., given you some details on my cultivation of the grape vine, I shall now proceed to the manner of making the wine; at least that which I followed, together with a few observations on the subject. My partiality to this branch of agriculture may make me view it as more important and valuable that it really is. It is certainly of some importance, and if I over value it, it is an error of judgment, and it is the nature of man to err.

The time best adapted for vintage is when the grapes are very fully ripe, and the cultivator ought to avail himself, if possible, of clear dry weather for this purpose. I find that scissors are much more convenient than knives for the gathering of the grapes, which ought to be cut off with as little of the stem as possible, recommending to the gatherers to cut off all the unsound berries, as also those that are too green. This is, I think, better done while gathering than after they have been brought to the vat, as in the latter case, the grapes must be handled a second time, which is a very troublesome operation when the quantity is great. Care must be taken to gather in one day all that is to be fermented at the same time in the vat. When the grapes are all ready, mash them thoroughly in a box full of small holes at the bottom and sides, placed over the vat and supported there by two pieces across it. This operation is done gradually, mashing only a small quantity at a time, and when sufficiently done, turn it into the vat, and go on so till the whole of the grapes are well and fully bruised; so that, if possible, not one berry—remains entire.

How long the grapes are to remain fermenting in the vat, is a question not easily answered, as it depends on many circumstances: such as the progress and violence, or gentleness of the fermentation, and the object one has in view as to the kind of wine intended to be made. Having been induced by Mr. M'Call's (of Georgia) success, to follow nearly, though not closely, his directions, on the 27th of July I gathered a large kind of coarse, pulpy, black grapes, which we call here "Black Hamburg,"[3] of which I had a small quantity. I wished to try it by itself. The juice, or must, weighed by Beaume's areometer for syrups, 9 degrees. I added five pounds of good brown sugar, which raised it to 15 degrees, which I thought sufficient. The fermentation proceeded but slowly; I suffered it to go on in the vat for twenty-two hours, when on drawing it off and pressing, I obtained 4½ gallons of must.

On the 7th of August, I gathered my Madeira[4] grapes, which are my chief stock. The few rotten ones, as also the green ones, having been carefully separated. The must or juice weighed 10 degrees, by the same areometer. I then added 102 pounds

3. An extraordinarily prolific and sweet, deep violet grape, famous in England for a vine in Hampton Court that produced a ton of fruit in one season. See the contemporary description in Prince, *A Treatise on the Vine*, 89–90.

4. Herbemont Madeira grapes. McCall cultivated these under the name "Warrenton" grapes and became irked when the variety had Herbemont's name attached to it in the 1830s.

of sugar, after which it weighed 14½ degrees, with which I was satisfied. The temperature of the atmosphere being comparatively cool, the thermometer ranging in the shade from 75 to 88 degrees, (it must have been somewhat less in my cellar, where my vat was,) the fermentation went on slowly for fifteen hours, when on drawing off the must, and pressing with a very imperfect press, I obtained 137 gallons of it. It is more highly coloured than that made the three preceding years, owing, I presume, to the superior maturity of the grapes. It appears to me useless to detail the same process by which I made a few more gallons of wine; some with a grape I call (perhaps wrongly,) Red Muscat,[5] and some with our native grape, called here Black Summer grape,[6] which had been some time in a state of cultivation, by which it is, I think, considerably improved. The must obtained from it was very rich, and promises to make a good wine, resembling, perhaps, Port or Claret. The quantity of it made is too small for a fair experiment, being only 3¾ gallons.

It appears to me that the use of Beaume's areometer[7] is somewhat illusory; for the sinking more or less of the instrument in the must, may depend on other circumstances as much as on the quantity of sugar it contains, whether naturally or by addition. Some grapes that are very pulpy, such are my Black Hamburg and red Muscat, yield a very thick juice, into which the areometer will not sink freely; owing, I presume, to the thick mucilaginous substance which it contains. Such grapes are, perhaps, more suitable to make raisins than wine. My aim was, to add about ¾ of a pound of sugar per gallon; the quantity of juice I could but guess at, as the sugar was added before the grapes were pressed, that the whole might ferment together, and I guessed nearly right; for, had my press been better, I should have had a few gallons more of juice.

I must observe that the must of the Madeira grapes has fermented in the vat about fifteen hours, which is a longer time than Mr. M'Call, of Georgia, allows for his. Yet, had I used my own judgment, I should have suffered it to ferment at least double or triple that time: but I depended on his successful experiment, knowing that no other disadvantage would result from it than the loss of colour, and of a certain astringency, which I think is a good and wholesome quality in wine, when at the same time it adds to its durability, and this is of great importance.

The must was, of course, put in casks, there to continue to ferment until the fermentation had changed the taste of the must from sweet and sugary to sharp and vinous. At first, the bung holes must be but slightly covered. My method is to cover them with two or three grape leaves and load them with sand. This forms a kind of valve, that suffers the gaseous vapours and the froth to escape, without exposing

5. Esteemed as table grapes in France, the Muscat was frequently misidentified in early American collections, hence Herbemont's caution. In Europe the Red Muscat (or more commonly Black Muscat) ripened in October. These grapes have matured far too early.

6. *Vitis aestivalis*.

7. The standard French instrument of the era for measuring liquid density.

the must, unnecessarily, to a too free contact with the external air. The fermentation went on briskly, and I filled up the casks every other day. This gradually decreased, however, and on the 19th it had considerably subsided, which induced me to put the bungs in the casks, leaving a small hole on one side loosely stopped with a peg. The casks had been previously filled up to within a finger's breadth of the top, which is, I fear, perhaps too much.

The filling up of the casks during the fermentation, gives it a fresh spring, and causes the foam to run over; which, I think causes a great waste. I was induced to adopt this method (instead of fermenting within, which is done by filling the casks only to within about three inches of the top, which I know is the practice of many vignerons in France,) by the recommendation of Mr. M'Call, not being willing to spare any trouble, and to incur a small loss, to insure success.

With regard to fermenting in the vat so short a time as Mr. M'Call does, the best proof of its being a good practice, is the success it had with him. Yet I am fully satisfied that in France the must is, in very few places, if any where at all, suffered to ferment in the vat less than twenty-hours, and in most places from six to ten or twelve days, and even sometimes more. This is particularly recommended to insure a good colour, body and durability in the wine; and although wine may be injured by fermenting too long in the vat, by acquiring too harsh or other bad taste, particularly if the rotten grapes have not been carefully picked out; yet I am satisfied that there cannot be any danger, if the must is drawn off and pressed out before the fermentation subsides, and *the cap falls* (as it is called.) As the fermentation goes on the grapes rise to the top, and form a kind of covering to the rest, (called *le chapeau de la vendange.)* This covering is convex. Now, the must is generally suffered to ferment in the vat (in France,) until this convexity begins to lessen or flatten; but it is thought, and it is, no doubt, improper to wait till it falls entirely; and, to be on the safe side, they had rather take the must from the vat a little too soon than ever so little too late. I believe the wine that has fermented but little in the vat is more delicate; that which has fermented more, but not too much, has a better body, more colour, and is rendered more durable, probably by the astringency it has acquired from the wood of the grape. The latter is also considered more wholesome, and is preferred by connoisseurs.

Although Mr. M'Call puts (in my opinion,) too much sugar in his must, Major Adlum puts a great deal more; and I cannot conceive the necessity or propriety of adding 3 pounds of sugar per gallon of must, be it ever so weak, as Major Adlum recommends.[8] I know very well that when the grapes are not sufficiently ripe they do not contain a sufficient quantity of saccharine matter to give a due strength to the wine, and that young vines do not produce as rich grapes as old ones; and that,

8. John Adlum's rather extensive remarks on sugaring must are found in *A Memoir on the Cultivation of the Vine in America* (Washington, D.C.: Davis & Force, 1823), 53–64.

therefore, it is proper to add to them what they are deficient in. But it seems to me, that by adding 3 pounds of sugar to a gallon of juice that must already contain a considerable quantity of it, is to make a must richer in sugar, I should think, than any that can ever be made any where by merely extracting juice of very ripe grapes from old vines; unless the grapes have been, previous to pressing, partly dried in the sun, which is sometimes practiced to obtain rich *vins de liqueur*, which are only drank occasionally and in very small quantities, and are never used as an everyday drink, being too sweet and too luscious for the taste of most people: nor are they considered as wholesome, at least for constant use. As for the notion that some persons have taken up in this country, that there is no wine made in Europe without the addition of sugar, and some add brandy, it is undoubtedly an error; and I can venture to say, that sugar or brandy is never added to the must in France, except it be by experimentalists. I must always except those wines that are *manufactured by merchants* for exportation to suit the vitiated palates of those who think wine is only intended to produce a degree of intoxication, and will not admit a wine to be good that will not produce it by a small quantity. No sugar is certainly made use of by the numerous class of vignerons who make nearly all the wine in France; nor is it added by the rich proprietors of vineyards in the making of their wine; and I will venture to assert, that not one-millionth part of the wine drank in that country contains one particle of sugar, other than that which belonged naturally to the grape itself. I know that the addition of sugar has been recommended by experimentalists, when the grapes have not acquired a sufficient degree of maturity, or when an uncommonly wet year has made the grapes too watery. This advice, however, proper as I admit it to be, has never been followed, unless by a very small number of individuals; not by one in ten thousand. As to the addition of brandy, it is never done at all, except, as I have said before, by exporters, to enable some of their wines to bear a sea voyage, and to suit particular tastes. We ought to remember that brandy is made of wine, and not wine of brandy.

But why should we attach so much importance to the strength of our wines? Are they not strong enough when they can be kept perfectly sound and improving for years? Are we not aware of the injury done to the human constitution by the too free use of strong drinks? Do we not know that temperance conduces to a long and healthful life? Do we see in the wine countries of Europe, where light wines are generally used, dyspepsias, liver complaints, &c., which are committing such ravages in this country? It appears to me that the rational use of wine, is to make it a blessing and not a curse. We show much better our gratitude to a beneficent God, by using that kind gift of his for the very purposes for which it seems to have been intended, viz. to exhilarate our hearts, produce cheerfulness, the parent of health and good morals, and to invigorate debilitated constitutions, &c.

When I began this, I had no intention to finish by moralizing; but my prosing pen would go on, and I suffered it, in the hope that if it did no good, it could possibly do no harm.

As I have in the above occasionally mentioned two gentlemen's names, with whom I somewhat differ in opinions and practices, I beg to assure them and the world, that nothing is farther from my wishes than to detract from their merits or provoke any discussion on this subject, other than that which may promote the good object we all have in view, and that I would not willingly hurt the feelings of any person on earth. I assure them that if I do not agree with them in every thing, I perfectly agree with them in many, and I hope their continued exertions will be crowned with the most complete success. We certainly agree perfectly in the principal object, which is, to induce the cultivation of the vine extensively, make good wine and much of it, and thereby benefit our country in an incalculable degree.

I am, very respectfully, dear sir,

Your obed't serv't,

N. HERBEMONT

Speech to the Agricultural Society of S.C. on the Benefits of Publicly-Sponsored Grape Cultivation.

February 17, 1827

Herbemont's 1826 oration before the Agricultural Society of South Carolina elaborated an argument made in the final section of his 1822 tract, *Observations on the Late Occurrences in Charleston*, contending that grape culture would revalue the waste lands of middle Carolina. The intervening four years had convinced Herbemont that the dollar drove the thinking of many of his contemporaries, and so the speech projected value gain in dollar amounts. These replaced the generalizations found in his earlier writing. The speech amplified his earlier call for government aid in bringing about the establishment of viticulture and the importation of European vintners. The call did not go unheard. Thomas McCall of Georgia, using Herbemont's reasons and numbers, convinced Governor George Troup of Georgia to request public funds for the establishment of grape growing in his 1827 address to the legislature. McCall's twist: the public monies would be used to secure American independence from foreign wine makers, by subvening current residents of Georgia, himself particularly.[1] The Georgia legislature demurred. Within Herbemont's own state, opportunists such as James McDonnald and Antonio Della Torre fished for state subventions, arguing in a December 1825 "Memorial" to the Senate of South Carolina that the money spent by citizens on the 44,732 gallons of wine imported into Charleston in 1824–25 might better be spent on a vintage produced at home. Herbemont felt compelled to supply his own calculations of the benefits of viticulture, and chose to focus on the revaluation upward of land in the state's interior. The projected benefits were so concretely specified and the outlay comparatively so small, that the speech sparked controversy about governmental subvention of agriculture. Herbemont drove the question by petitioning the South Carolina legislature for support in 1826. The Agriculture Society's concern with publishing its important proceedings, demonstrated in its resolution to have this speech printed, would lead shortly to the founding of

1. Gov. Troup's 1827 address to the legislature, quoted in Stephen Franks Miller, *The Bench and Bar of Georgia* (Philadelphia: Lippincott, 1858), 399.

its own organ, the *Southern Agriculturist*. Published in *American Farmer* 8, no. 51 (March 9, 1827), 403–4.

Cultivation of the Grape.

Pendleton, Feb. 17, 1827

Mr. Skinner,
In obedience to the resolution of the United Agricultural Society of South Carolina, I herewith enclose for publication in the *American Farmer*, a copy of an original communication read before the society at their meeting in December last, on the "cultivation of the grape," by Mr. N. Herbemont, of Columbia, S. Carolina.

JOSEPH N. WHITNER, Sec'ry

Columbia, Nov. 20, 1826

GENTLEMEN,
The cultivation of the grape having been here lately the subject of much conversation, the great praise which my friends have bestowed on my wine, and the high sense I entertain of the vast benefits this country might derive from it, induced me to make a few calculations, to ascertain the most profitable advantages that would be effected by spirited exertions in the cultivation of our pine lands in this valuable article. In doing this, it is proper to estimate the present value of these lands and that which they will have acquired by the plan proposed, not after a given number of years; for the time required to produce the full effect depends on so many circumstances, that it cannot be calculated with any degree of certainty, but must depend on the degree of our exertions, and the vigour with which the execution of the plan may be commenced and persevered in. However this may be, the success here contemplated, can scarcely fail to be the ultimate result.

We may assume for the above purpose, (and great accuracy is not of material importance in this case,) that the state of South Carolina contains sixteen millions of acres. It is thought that nearly one half of it is pine barrens, sand hills, and other pine lands—amounting, therefore, to eight millions.[2] Out of this we must deduct about three millions of acres for the water courses and our rich swamps bordering upon them, and a small quantity of the best quality pine lands,[3] which I presume

2. While president of the South Carolina Board of Public Works in 1822–23, Herbemont worked on the committee that corrected the map of South Carolina being prepared by Robert Mills, the first comprehensive map to be issued by a state in the United States. Robert Mills, *Atlas of the State of South Carolina, Made under the Authority of the Legislature* (Baltimore: F. Lucas Jr., 1825). His figures, consequently, have as great an accuracy as was manageable by any political geographer in the United States in 1826.

3. The variable fertility of the sandhills pine barrens is attested in a 2002 report for the U.S. Environmental Protection Agency, "Ecoregions of South Carolina," by Glenn Griffith (USDA), James

is a full allowance. Five millions are then left of poor sand hills and pine barrens. The present value of this land cannot be precisely ascertained, but it is well known that thousands of acres can be bought at from ten to fifty cents per acre. I think we may safely say the average value is not more than fifty cents. This makes then $2,500,000. If this allowance is thought too small, doubling it will make no great difference in the result of the calculation.

The value of lands planted in vines in Europe, particularly in France, is known to be very great, viz: from $500 to $5000 per acre; and a vineyard of seven acres is known to have been sold, not long since, for considerably more than the latter price. Experiments in Georgia,[4] in this state, and elsewhere, have shown, that we can reasonably calculate on an average crop of 300 gallons of wine per acre—and this is more within the control of the cultivator than is generally supposed.

From these premises, it must be thought, extremely low to estimate lands planted here in vines and in a bearing state, at $500 per acre.

Sure this will not be considered extravagant, when the clear yearly profit of such an acre may be worth as much as the fee simple is here estimated. Supposing one acre only for every fifty to be in vines; the value of the lands in this culture will then be 100,000 acres at $500 per acre—$50,000,000. But can we suppose that proprietors of such lands, having experienced the value of such cultivation, would be satisfied with only one acre in fifty? We must suppose double the quantity a very moderate estimate, which will make the land thus cultivated, be worth for 200,000 acres of it, $100,000,000.

It cannot be supposed that the remaining four million eight hundred thousand acres, a great proportion of which is susceptible of so much increased value, can possibly remain at the former price of fifty cents per acre; and under the contemplated circumstances, an increase to at least $2 per acre must be a very moderate calculation.

Therefore, 280,000 acres in vines, at $500, make	$100,000,000
4,800,00 uncultivated, or cultivated in any thing else, at	$29,000,000
Total value of pine lands in the state at that time,	$109,000,000
Former, or present value, deducted,	2,500,000
Leaves a difference, or increased value, of	$106,500,000

This amount, then, is the bare increase in the value of the land. Now let us see the amount of yearly income produced by the land.

We have assumed an average crop of 300 gallons per acre. Let us even reduce this to one half, 150 gallons at $1.00—150 dollars per acre will make for 200,000

Omernik (U.S. Geological Survey), and Jeffrey Comstock (Indus Corporation), www.epa.gov/wed/pages/ecoregions/ncsc_eco.htm.

4. Herbemont refers to Thomas McCall's plantings.

acres, $50,000,000 per annum. (In Europe, some of the vineyards yield sometimes even more than two thousand gallons per acre; this, however, is rare, and must be on land of very great fertility.) I allow nothing for the produce of the rest of the land, although this may be very great, as probably a few other valuable articles will keep pace with the culture of the vine—such as silk, which may be raised in the mean time in very considerable quantities, without interfering at all with the principal object; for these two, viz: wine and silk, do very well together.[5]

It must be remembered that the above need not in the least, or in a very small degree, affect the cultivation of the present staple products of this state; and that what is here proposed, is purely to be an increased value caused by the cultivation of new articles in a soil, not otherwise available—and this to be done, or at least chiefly begun, chiefly by suitable persons brought from Europe.

There France, Italy and Germany can yield to us thousands of honest, industrious, and willing cultivators.

Let not the above be too hastily pronounced visionary. Let us remember that we have never been inferior to Europe in any of our undertakings; we have even exceeded them in several, and the produce of the vineyards in France alone exceeds the above amount.

The advantages anticipated here are, however, not the only ones to be expected from the adoption of a system calculated to produce the result. They are pecuniary only, and they will necessarily be accompanied by an immense augmentation of physical power in the state, and consequent weight in the scales of the Union of the states, and respectability abroad. "Those extensive tracts of sandy soil are found congenial to the vine, and, like the same soils in the south of Europe, where health reigns perennial, yield those mild tonic wines so friendly to health, temperance and prosperity."[6] Our moral condition will then be much improved, and the advantages resulting from this are truly incalculable.

With all these prospects before us, shall we remain in passive indolence when we have so many motives to urge us on; motives, several of which have not been even hinted at in this paper?

Will not our legislature, will not spirited and patriotic individuals, lend a helping hand to promote such desirable consequences? I fear it will be said, let the thing take its own course—let it rest on individual exertions; and many plausible and fashionable arguments will be used, to show that governments ought not to meddle with things of this nature. To this I answer, that if the prosperity of nations

5. Because crop diversification was a central doctrine of reform agronomy, Herbemont did not wish to be seen advocating the creation of a new staple monoculture in the Midlands, hence his mention of silk. *Observations Suggested by Recent Occurrences in Charleston* had advocated four types of farming: olive tree orchards, sheep herding, silk production, and grape cultivation.

6. *Report of the Secretary of the Treasury, of the Commerce and Navigation of the United States* (Washington, D.C.: Gales & Season, 1819), 21.

and states be not the business of governments, I do not know what governments are instituted for. Consult history, the best guide of nations and communities, and you will find that if not for the influence of such doctrines, there would probably not be yet one pound of silk raised in all Europe, nor perhaps the one-thousandth part of the wines now raised in that country. The government of the United States has not thought it derogatory at the last session of Congress, to interest itself in the cultivation of silk, and has begun measures to promote it.[7] It is a most valuable article; but its importance is not to be compared with that principally recommended here and with which it is easily, I was going to say naturally, connected.

If it be thought that we have somewhat traveled through some of the regions of Utopia, it will be readily admitted, if it be merely meant that the efforts which may be made towards the attainment of the result here anticipated, can be literally expected. We must admit that a variety of circumstances will necessarily change them.

In this, as in every thing else, the effect must be proportionate to the cause; and something like the anticipations here above enumerated, must take place according to the adequateness of the means.

I am, gentlemen, very respectfully,

Your obed't serv't, N. HERBEMONT

7. In 1820 the U.S. House of Representatives and in 1825 the U.S. Senate formed standing committees on agriculture charged with encouraging legislation that would further the farming interests of the nation. Both groups in their early years were characterized by inaction rather than energy, reflecting a popular hesitancy to have government intervene in the practice of agriculture. Their existence, however, raised the hopes of persons like Herbemont, who envisioned the government encouraging agricultural projects. "Samuel Saunders, for example, petitioned Congress in 1825 in the interest of 'the benefits to be derived to this young and growing country by the successful introduction into it of a variety of the best vines of foreign origin' and asked Congress to pass legislation to encourage the exchange of grape vines (Petitions 19A-G1.1); and John Adlum offered to write a memoir describing the techniques he had developed to cultivate grapes and make wine from the vines indigenous to the Washington, D.C., area if Congress would appropriate funds to have the memoir published (Petitions 20A-G2.2)." "Records of the Agriculture Committee," *Guide to the Records of the U.S. House of Representatives at the National Archives, 1789–1989* (Record Group 233), Center for Legislative Archives, National Archives (Washington, D.C.: National Archives and Records Administration, 1989), section 2.9. The U.S. Congress declined both petitions. While silk occupied its debates, the first initiative of these bodies was to form an act imposing a tariff on the importation of spirituous liquors as an encouragement to American distillers.

Memorial to the Senate of South Carolina

December 1826

Formation of a standing committee on agriculture in the U.S. Senate in 1825 and in state legislatures inspired a brief moment of hope that the national and state governments might fund agricultural projects. In December 1825 James C. W. McDonnald and Antonio Della Torre petitioned the South Carolina Senate for funds to underwrite five years of labor (the time from planting to fruiting) establishing vineyards, olive groves, and silk production in the hill country of South Carolina.[1] While the petitioners had cribbed the idea from Herbemont's *Observations on the Late Occurrences in Charleston*, they brought something more to the table than audacity; Della Torre was the son of an Italian vintner and had connections with a community of grape growers in Italy who would emigrate to Carolina if monies were provided for passage. The South Carolina Senate declined to act upon their petition. Neither had actually made wine in the state. Nicholas Herbemont had. From 1814 to 1822 he had produced small quantities in order to refine the quality of his vintage. Having settled upon four grapes—the Madeira (Herbemont), Lenoir, Arena, and Bland's Madeira—as optimal for his purposes, he began commercial production in 1823. Because he regularly had invited members of the legislature sitting in Columbia to sample his wine, the members of the standing committee had no doubt about the practicability of wine production when, after tabling McDonnald and Della Torre's petition, Nicholas Herbemont submitted his "Memorial" in late 1826. It was accompanied by a copy of his November 20, 1826, speech to the Agricultural Society of South Carolina. Both documents were referred to the South Carolina Senate's Committee on Agriculture for review. The committee's chairman, Whitmarsh Seabrook, requested specifics about the level of subvention desired. Herbemont replied with a document specifying these. In the legislative papers these communications are found in Ser: s165005 Item 00073, 1827, and Ser: s165005 Item 00316, 1827, respectively. Only the "Memorial" was published, along with the response of the Senate Agriculture Committee. Seabrook responded to Herbemont's proposal with a flattering refusal. The

1. "Memorial to the Honourable the President and Members of the Senate of the State of South Carolina," *American Farmer* 7, no. 42 (January 6, 1826), 329–30.

senate resolved "That it is expedient to encourage the cultivation of the vine in this state, but that the condition of the treasury will not authorize the appropriation of money for that purpose at this time." This refusal, however, did not quell the controversy Herbemont had raised over whether the government should take an active hand in promoting agricultural enterprises. Because northern manufacturing interests had used the U.S. Congress's Committees on Manufactures and Committees on Finance to push tariffs that had the potential to injure southern agriculture, some citizens wondered whether governmental advocacy on behalf of agriculture should be urged as a countermeasure. In 1828 the Senate Agriculture Committee resolved "To Enquire into the Expediency of Appropriating Money to Encourage Agricultural Interests." The Nullification Crisis provoked by the Tariff of 1828 derailed efforts to form an effective policy of governmental encouragement for agriculture. To Herbemont's dismay, the state senate chose not to act. Published in *American Farmer* 9, no. 42 (January 4, 1828), 332–33.

To the Honourable the President and Members of the Senate of the state of South Carolina, the following memorial is most respectfully submitted.

GENTLEMEN,

It is undoubtedly most pleasing to see an individual make honest endeavours to improve his condition, by whatever talents and industry he is endowed with. It is a most glorious and interesting object, to view a whole community making great exertions to improve the happiness of thousands. These exertions are now making, and the present state of our country seems to require they should be made with additional vigour.

This state of things may plead a better excuse for your memorialist, for presenting himself before your honourable body, than any thing else he could adduce, besides conceiving it the duty of every citizen, to add his efforts to the general mass, for the benefit of his country.

He would then most respectfully represent, that a very great proportion of this state, perhaps nearly one half, consists of pine barrens, sand hills, and other light lands. That these, in their present state, are productive of little or no advantage to the individual proprietors, or to the state, either in valuable productions, or by supporting an useful and abundant population; a great desideratum in these southern states; even more so than in other countries, for very obvious reasons.

Satisfied that the goodness of Providence has created nothing in vain, it has been the object of his most serious and anxious thoughts, for a great number of years, to found out some important culture which could render these extensive wastes, in some degree, valuable. This pursuit has cost him much time, labour, and expense, and the result of his experience is, that without scarcely a shadow of doubt, this desert is capable of yielding some of the most valuable productions of

the earth; and bearing, supporting, and enriching a comparatively dense population. Most undoubtedly, the greatest part of this land is capable of producing great crops of wine, silk and other objects usually produced in similar latitudes. The culture of the vine, however, is the most important of these, and that on which your memorialist has chiefly hitherto bent his efforts and means. This country is capable of producing the richest wines, and in quantities not to have been expected, a priori, from the apparent sterility of the soil. Experiments clearly show that, with only tolerable cultivation, average crops of at least three hundred gallons of very good wine, can be produced per acre.

It is not, however, in the power of an individual of very limited circumstances, to carry an object of this importance, to the extent it deserves, and with the most beneficial results to the state.

It is generally said, and perhaps with truth, that objects of a commercial and agricultural nature, are best left to the interested exertions of individuals. True as this position may be, in ordinary cases, your memorialist believes this to be an exception, and begs leave to submit to your collected wisdom, the following reasons for his opinions.

1st. The culture of the vine is an art which cannot be easily acquired from the mere analogy with other objects of cultivation; neither can it be learned, except by very few, by books alone.

2d. Experience has shown, that the mode of culture must be very different here from what it is in Europe; so that Europeans, unless they were taught in what this difference consists, would not succeed except after experiments that require a great number of years to be fully made. Europeans, however accustomed to this culture in their own countries, could soon learn and understand the method necessary here.

3d. The owners of, or rather the dwellers on this extensive tract of country are, with few exceptions, persons of insufficient enterprise and pecuniary means to undertake a culture so perfectly new to them, particularly when it cannot be expected to yield any return for at least three years. The owners of large tracts are generally persons who have other lands suited to the cultivation of the staple articles of our state, and are not likely to undertake the exercise of an art they know nothing of, unless they can readily procure suitable persons to direct their labour.

4th. The difficulty of obtaining such persons, is considerable in these southern states, owing to the most erroneous impressions abroad, that this is a most deadly country for foreigners; whereas, the truth is well known to you, that there is no healthier country in the world than our pine lands, and particularly our sand hills.

To obviate these difficulties, I would most respectfully submit to you, gentlemen, whether it would not be most beneficial to this country, to import a number of vignerons from France, Italy, Germany and Switzerland, to establish them

in small communities, in different sections of the state under consideration.[2] The amount of money required for this need not be large, but the benefits will necessarily be in proportion to the sum judiciously expended.

As an individual, if my pecuniary means permitted it, I should adopt some plan like the following: Have agents in Europe to procure suitable individuals, chiefly in families, as much as possible, defray the expenses of their emigration, and to repay me for the same, I would have them to work for me, about five years, during which time, I would feed and clothe them, &c., and at the end of it, give them (to each prime labourer,) fifty acres of land, in fee simple,[3]—in which case, I would petition your honourable body to exempt them from the law of escheat. I would, besides, give them such facilities to commence their establishments as might be proper. There is no doubt, but a great number of honest and industrious persons could be procured on some such terms, and that their success would induce many of their friends to join them; some of them with ample means and economical habits, who would form large and useful establishments. The current once directed to our southern states, there is every probability that it would continue to flow spontaneously; and the effect of this would most undoubtedly be that, in a few years, this land, now a desert, would be comparatively thickly populated; would yield to individuals, productions of immense value, in every point of view, and to our state incalculable advantages.

If your memorialist can be, in any manner, an instrument in producing such a desirable state of things, he begs leave to assure you, that his exertions will not be wanting, and he truly believes that his experience in the culture of the vine, and the making of wine in this country, sufficiently warrant him in thus making the proffer of his best services.

If you think proper, gentlemen, to honour this paper with your notice, I shall, with great readiness and pleasure, communicate to you, through your committees, (or in any other manner you may choose to direct,) any further information or explanation you may require.

I am, with great respect, gentleman,

Your fellow citizen,

N. HERBEMONT

2. In the *Southern Agriculturist* 2, no. 7 (July 1829), 37, J. G. remarked, "What has become of the public lands formerly attached to the Cattawba Canal? Did not these lands revert to the State? If they are still public property, they would be greatly increased in value by a judicious division of part of them amongst good emigrants, such as Mr. Herbemont describes."

3. Herbemont invokes one of the most ancient incentives to immigration, the head-right of fifty acres—the idea and amount were first proposed by Captain John Smith in his colonization tracts two centuries previously.

Domestic Wine.

December 23, 1826

Production from the eight acres of vines Herbemont had planted at his farm, Palmyra, were sufficiently great from 1823 onward to permit the commercial production of wine. By 1826 he had mastered the craft of wine making, leading to a series of excellent-tasting vintages. This report whetted the taste of a group of planter connoisseurs in Maryland who wished to manufacture fine wine themselves.

After drinking Herbemont's samples of the 1827 vintage, George Fitzhugh, John S. C. Monkur, Henry W. Rogers, William Gibson, James Cox, John B. Morris, and William McDonnald incorporated the Maryland Society for Promoting the Culture of the Vine.[1]

Extract to the Editor

Columbia, S.C., Dec. 23, 1826

You, no doubt, remember that I made some wine last August, which, I judged would be very good. It has turned out as I judged. It was found so good, though only three months old, as to sell readily at two dollars per gallon, at which price, I firmly believed I could have sold in three weeks time four or five thousand gallons if I had had it. I was assured by several persons the most respectable in the state, that *experienced old Madeira drinkers* pushed the Madeira aside to drink Palmyra. This is very flattering, and is very encouraging. I had intended to send you at least half a dozen bottles of it; but I unfortunately lost almost all I had reserved for myself.

I am very respectfully, dear sir,

Your obedient servant,
N. H.

1. Notice, *American Farmer* 10, no. 28 (September 26, 1828), 223.

N.B. Dr. R is so well satisfied with my success with the grape, that he assured me it was his firm determination to have two hundred acres planted in vines in ten years.[2]

2. Dr. Edmund Ravenel of Charleston, the famed conchologist.

American Wine.

January 18, 1828

Nicholas Herbemont's donation of three bottles of wine to John S. Skinner inaugurated a growing engagement between him and the circle of Maryland and northern Virginian planters. In 1828, when Skinner handed the editorship of the *American Farmer* to Gideon B. Smith, one of the Maryland group most interested in wine, the relationship would grow even stronger. The cover letter for the gift of wine reveals one of the great difficulties facing even the most experienced and well-schooled oenologists in America, the fog of misinformation about grape origins. Hybrid grape varieties, such as Herbemont's Madeira and the Isabella, differed sufficiently from pure native grapes, such as the "Arena" (*Vitis aestivalis*), that they were often presumed to be of foreign derivation. Often lore was created to supply a foreign nativity to these varieties. William Prince, the finest grape botanist in the United States in the 1820s, collected such lore assiduously. His claim that the Isabella was collected in the wild outside of Charleston seemed implausible to Herbemont, who here offered his own suggestions. His request that agriculturist George Gibbs, whose wife introduced the variety to New York, supply an explanation resulted in the confirmation of Prince's story. Published in *American Farmer* 9, no. 51 (March 7, 1828).

Columbia, S.C. Jan. 18, 1828

J. S. Skinner, Esq.

Dear Sir,—I have been for a long time but a sorry correspondent of yours, or rather no correspondent at all. It is not, I assure you from a diminution of my great regard for you and your most useful labours; but from causes which I could not perhaps account for satisfactorily. To make some little amend, however, this is to inform you, that I have just put in a box, directed to Mr. George Fitzhugh, Jr. three bottles of my wine, made last August.[1] Two of them are of the Madeira grape,[2] (so

1. Virginian George Fitzhugh Jr. (1806–1881) was a singularly curious individual. One of the first American sociologists, an ardent champion of slavery as an economic and moral system, and bibliophile, he lived a semirecluse in his estate on the northern neck, operating more in the republic of letters than the society of his peers.

2. The "Herbemont" grape.

called here,) the other of a native grape commonly called here the summer grape. Finding it very good and deserving a name, I called it "Arena." This vine grows abundantly in our sand hills. The Arena requires at least one year before it can be properly judged of, as before this, it has a wild unpleasant taste, which changes so much as to become (though an uncommon) a very pleasant, strong bodied, highly flavoured wine. I beg therefore you will husband it so as to keep some till it has attained the age of at least one year. You may easily do this by filling a smaller bottle,[3] after it has settled so as to be perfectly clear, cork it well, and keep it on its side in a cellar, till you think proper to pass sentence upon it. The other which I call "Palmyra," from the name of my place,[4] is now fit to drink though it does improve also by age. I believe the Arena will be found the best grape for wine among the natives. It also improves much by cultivation, in point of size, juiceness and other valuable qualities. It is only a small grape; but the vine bears abundantly, never rots and never fails, that I have ever noticed. The native grapes are, however, much more difficult of cultivation than the old cultivated ones. Cultivation, however, corrects somewhat of its *uncivilized* qualities. The greatest difficulty is in propagating it by cuttings, which will so seldom take root, that not more than three or four will grow out of perhaps fifty;[5] but cultivation improves considerably this *unsocial temper*.

I see Mr. Prince has a dispute on his hands relative to the birth place of his favourite the Isabella grape, and seems determined to prove it a native of this state.[6] All the inquiries and researches that I have made on this subject have proved fruitless, and it is certainly not known as a native in Dorchester,[7] although it is very common all over this country; but no one seems to know where it came from. It certainly bears strong marks of some of our natives, particularly that called the Fox grape. Cultivation has, no doubt, rendered some of them less sensible. It is, in common with the Fox grape, downy under the leaves; but in all the native ones I have noticed the down is of a russet colour, and in the Isabella it is white. This may not be a character sufficient to condemn it; for though I have not noticed a white down on the wild ones there may be many that have it, and join to this its taste,

3. This phrase suggests that Herbemont shipped three large demijohn bottles of wine to Skinner.

4. His farm in the sand hills at Eightmile Branch on the road to Camden in Richland County, S.C.

5. *Vitis aestivalis* propagates by seed much more readily with all the variance in size and configuration that is found in wild growth.

6. William Prince was proprietor of the Linnaean Botanic Garden in New York, vice president of the New York Horticultural Society, and frequent correspondent in the agricultural press. In *American Farmer* 9, no. 39 (December 14, 1827), "A Constant Reader" doubted Prince's narrative of the grape's origins, indicating that it was a "Laspeyre" grape brought from France. Prince replied on December 28, two issues later, defending his story of the South Carolina genesis of the grape.

7. A county settled by New England Puritans in the Lowcountry of South Carolina at the end of the seventeenth century.

which has strongly that of the Fox grape. I hope Mr. George Gibbes will solve the difficulty.[8]

I am, with great respect, dear sir,

Your obedient servant,

N. HERBEMONT

8. A botanist then living on Long Island whose wife, Isabella, first secured the grape from the governor of North Carolina, who claimed to have collected the grape outside of Charleston.

Pruning Grape Vines.

April 20, 1828

By spring of 1828 Nicholas Herbemont's writings on wine in manuscript and print were circulating widely. The first three installments of "An Essay on the Culture of the Grape Vine and Making of Wine" (January–July 1828) had appeared in the *Southern Agriculturist*. J. S. Skinner, editor of the *American Farmer*, printed a rumor from a correspondent from Alabama in volume 10, no. 4 (April 11, 1828), 31, that Herbemont's method of pruning (contained in his discussion "Cuttings" that appeared in the March issue of *Southern Agriculturist*) had led to the ruin of a crop: since 1815 a rather lively wine making community had existed in Alabama, with a contingent of ex-Bonapartist French officers at Demopolis leading the effort.[1] It was unlikely because late-pruning frost-damaged vines during the spring sap bleed does not injure the plants. If the vineyard failed, there were other causes at work. Pierce's disease was endemic in Alabama, where vine culture proved extremely difficult. Herbemont's response was apologetic, encouraging, and informative. The latter half of the letter complies with a request by the editor to comment on the reasons for the failure of so many grape-growing projects. Published in *American Farmer* 10, no. 7 (May 2, 1828), 52–53.

Columbia, S.C., April 20, 1828

J. S. Skinner, Esq.

Sir,—I noticed in the *American Farmer* of the 11th inst. a short article in which you state, having "been warned by a correspondent in Alabama, that what I observe in relation to the pruning of vines, after they have put out in the spring, will not hold good previous to their putting out after the sap is rising freely," &c. I should exceedingly regret that any person should be led by any thing I have written on the subject, to so serious an injury as this which your correspondent mentions to have been the case with a gentleman who lost "all he had by late pruning." I wish your correspondent had referred to the particular part of my writing, whether in private correspondence or in publication, that I might have it in my power to judge more

1. John Charles Dawson, "The French in Alabama: The Vine and Olive Colony," *French Review* 18, no. 2 (Dec. 1944), 92–95.

accurately of the extent of the mischief I may have done. I do not recollect ever having positively advised late pruning, except in cases of necessity; such as, after the ill effects of a frost. I may have expressed an opinion, that late pruning might prevent this bad effect, by retarding the putting out of the vine,[2] which it certainly does; for, in the case of a vine which has been pruned early, the efforts of the sap are exerted on very few buds, which are by this means pushed out sooner than they otherwise would; for the buds which put out first in an unpruned vine, are those which are generally suppressed by the pruning. Whatever may be the effect of late pruning, I can assert that I never have seen an instance of the death of a vine for having been pruned at any particular time; and the gentleman above mentioned may have lost his vines by some other cause that he is not aware of. It is pretty generally said that late pruning ought to be avoided, lest the vines are injured by bleeding. This effect is so generally believed, and the appearance of a vine while it bleeds profusely, is so alarming, that I dislike very much to see it; but yet, I never have witnessed any ill effect from it. It is very possible that some kinds of vines may not bear it as well as others, and if your correspondent's remedy of tallow and finely powdered charcoal stops the bleeding, it ought to be resorted to whenever practicable. I generally prune as early as I can, but it is not for fear of the bad effects of late pruning; but because by so doing I have cuttings to plant earlier, and also more time to attend to the other necessary work.

Several very severe frosts having the first week of this month done more injury to my vines than I ever have witnessed before, I have just finished pruning off the injured parts; and this operation was so severe, that it might be called amputating; for I have cut off all the last year's wood, just below the young shoots that had been in the smallest degree affected by the frost. By this my vines are left perfectly naked, not having one single green leaf, and but very few buds, that had not yet put out, and on which I solely depend now for a crop this year, which will, of course, be very small.[3] The vines have bled much, but they have nearly stopped. Although this state of things does not precisely come within the objections of your correspondent, yet it must come very near it, as the vines are now absolutely destitute of leaves. I believe that the reason the vines do not bleed when they are in full foliage, is that the sap is sufficiently evaporated by the perspiration of the leaves, which sap being very abundant, must run out when the vines are cut at a time when they have no leaves, and it is in circulation. It is true that in the night time the leaves perform,

2. Late and light pruning remains the recommended response to frost-damaged vines. A. J. Winkler, *General Viticulture* (Berkeley: University of California Press, 1974), 488.

3. There was no consensus among Herbemont's contemporaries whether permitting the vines to ooze sap or to close the face of cuts with plaster is preferable for the long-term viability of the plant. See Prince, *A Treatise on the Vine*, 324. Also, "Bleeding of Vines," *Magazine of Horticulture, Botany, and All Useful Discoveries and Improvements in Rural Affairs*, New ser. 4, no. 14 (1848), 179. The bleeding of vines pruned in spring before the foliage buds does not hurt the vines, no matter how profusely they ooze liquid. See Winkler, *General Viticulture*, 305–6.

probably a contrary operation by absorbing moisture from the air; and this may be the difference by which the bleeding may sometimes be found injurious. What will be the effect of my bold chirugical[4] operation on the vines this spring, I cannot positively say; I can only hope that it will be followed by the same beneficial effects which have resulted from similar ones formerly performed; although, as stated above, I have never known so great an injury before by frost.

I really wish your correspondent had quoted my words, and the place where to find them; and although I have no kind of doubt of his truth and honour, yet I would have been, perhaps, somewhat fairer towards me, had he given his name, at the same time that it would be likely to give more credit to his assertions. Although I should prefer this mode of making observations on what I may have uttered, yet as my only wish is to do as much good as it is in my slender power to do, I make no objection at all to any discussion being elicited on this subject by your Alabama correspondent, or any other person, whether they chuse to give their names or not. I only say that it is more desirable they should, both in fairness to me, and as regards their credit in the world.

You have also hinted to me, sir, in a private note, that I ought to proclaim, candidly, the difficulties or impediments to the making of wine profitably in this country. I am not aware that I have at any time purposely concealed any thing of the kind; but I am pretty willing to do expressly as you hinted; and this may be a very suitable season for this, as our late fruits are one of the greatest we have to encounter.[5] If this could be obviated, the others are probably more easily surmountable. I shall in due time inform you of the effect of my late severe remedy, and if any of your correspondents can suggest an effectual one, I shall be most happy to put it in practice. I must state here; that I have no faith in the prevention of the effects of frost by means of a straw rope passed round the vines, or other trees, having its end dipping in water. I have, reluctantly, tried it without any sort of success; but this may be owing to my want of faith; or to be more candid, it may be that its good effects are only against a slight frost, and cannot avail against such severe ones as we had lately, after having had so much warm weather.

The next great difficulty, and perhaps the greatest, is our want of practical knowledge, perseverance and industry in the pursuit. We are apt to go from one extreme to another. Some seem to think that it is sufficient to plant vines, and then let them take care of themselves; and when the poor things are found not to do well, the project is abandoned. I should like to know how much cotton, rice, corn, tobacco, wheat, &c. such persons would expect to make by the same means? Others go to a most extravagant extent, scarcely knowing the a, b c, of the busi-

4. Surgical.

5. Herbemont would conduct a more thorough examination of the causes of failure in wine culture in a letter dated November 15, 1834, to Edmund Ruffin of the *Farmers' Register*.

ness. I have heard of one who made his negroes plant this winter *one hundred and fifty acres of vines*.[6] I venture to predict that he never will make five gallons to the acre from these vines. If a person thinks he can just substitute vines to cotton, or corn, or tobacco, without having any practical knowledge of the culture the vine requires, he will find himself disappointed. If he be a lawyer, and get no business, he might as well substitute the practice of medicine without any previous study to fit him for it. As theoretical knowledge alone is not sufficient, the best remedy to remove this difficulty, is, after much reflection on this subject, to get from Europe a number of suitable persons in families. They ought to be under the direction or advice of some one experienced in this climate. These being judiciously scattered through the country, would form establishments, and diffuse that knowledge and practice which are wanted, and without which we shall not do in *fifty* years what we could, by this means, do in five. If, therefore, it is desirable to introduce this culture in this country, I know of nothing likely to yield more beneficial results in many respects, it ought to be done according to that manner which will insure the most speedy success. This, however, is not easily done by private enterprise, on account of the expense; but I think it is clear that, if the country is to receive the benefit, the country ought to afford such assistance in forwarding this object, as is not in the power of individuals to afford, unless they are wealthy, and these do not appear willing or patriotic enough to undertake it. The objection of individuals is, that the returns are not to be expected for several years. This brings me to state this as one of the difficulties; which is, that we do not like to wait three, four, or five years before we reap the fruit of our labours and expenses.

Another difficulty of some considerable magnitude is, the number of birds and insects against which the vine cultivator has to wage an incessant war. The remedy to this is obvious, though not easy; and it is their destruction. When, however, extensive vineyards are established, the depredations committed must be spread on a larger surface; consequently less sensibly felt, when, at the same time, there will be more persons interested and occupied in the destruction of these depredators.

Another kind of depredators are also much to be dreaded; and I regret to say that in this country, which is emphatically said to have a government of laws, property necessarily exposed, is so little respected; and people are seen, some of whom, one would think, ought to know better, to prey on and carry away the fruit of other's toils, as if it were a matter of right.[7] If it be not a matter of right, it is a matter of custom, and a most shameful one it is. The remedy to which—honesty

6. It appears someone heeded Herbemont's call to abandon cotton and shift to grape culture. The scale of the enterprise suggests the degree to which the Tariff of 1828 had shaken Carolina's planters. The identity of this person cannot be determined. The viticulturist operating on the largest scale in South Carolina was Abraham Geiger in Lexington County, who had thirty acres in cultivation.

7. Theft of fruit. The greatest literary reflection on the subject of customary grape theft in the South is Charles W. Chesnutt's story "The Goophered Grapevine," first published in *Atlantic Monthly* in 1887.

in the people and laws to enforce this virtue, is most obvious, through perhaps difficult of attainment.

These are the most prominent obstacles to the successful cultivation of the vine in this country, that occur to me at present. When I write to you again, which I intend to do shortly, if any other difficulty occurs to my mind, I shall mention it.

I am, respectfully, dear sir,

Your obed't serv't,

N. HERBEMONT

Letter to Nicholas Longworth on the Grape Vine.

March 19, 1829

Nicholas Longworth (1783–1863) was the first winemaker to build a national clientele and secure a fortune from the sale of his vintages. Born in New Jersey, he had lived in South Carolina from ages eighteen to twenty-one, moved to Cincinnati in 1804, and read law for half a year with Judge Jacob Burnet before setting himself up as a lawyer and land agent. Recognizing the unique potential of the city, Longworth invested heavily in real estate. By 1819 his holdings produced sufficient income for him to retire from the bar permanently, and by 1829 they were so great as to make him the wealthiest man in Ohio. His passion was horticulture, which he practiced with an amateur's zeal, expending much time and money on experiments cultivating strawberries and grapes. He attempted unsuccessfully to grow and make wine from *Vitis vinifera* grapes, falling victim to the inevitable problems with fungus, disease, and insect depredation that had bedeviled every previous importer of French vines. He found success with the Catawba grape, supplied to him by John Adlum. With immense monetary resources at his disposal, he encouraged the variety's cultivation by anyone who would plant it within a fifty-mile radius of his city, promising to buy all the juice pressed from the harvest. The German immigrants who settled Hamilton County responded enthusiastically. Longworth's vintages of the 1820s suffered from the liabilities that troubled Adlum's wine—brandy and too much sugar. Herbemont's advice led to the elimination of the brandy and the tempering of the use of sugar. This letter, apparently the second or third in their correspondence, follows upon Herbemont's package of vine cuttings. He discusses the virtues of the grapes he dispatched—the Herbemont, Bland's Madeira, and Isabella. He indicates that he has not cultivated Adlum's Catawba, the grape upon which Longworth would stake his fortune. Herbemont's enthusiastic endorsement of grafting as a means of promoting quick vine growth would be adopted by Longworth and spread as doctrine among the Ohio grape cultivators. Herbemont's insistence on the importance of soil, apparently refuting a claim by Longworth that it did not matter, asserts an enduring truth of wine making. The degree to which Longworth absorbed Herbemont's methods of can be witnessed in Longworth's own communications to the agricultural press that commenced in the 1830s. The single most significant thought in Herbemont's letter was contained in his

criticism of John Adlum's attempts with his wines to ape the names and styles of reputable French and Portuguese vintages. He asks, "Why not be satisfied with any good wine, sui generis, which the country, soil and climate permit to make, and which, though different, may be of equal value, or perhaps superior to the imported ones?" Published in *Southern Agriculturist* 2, no. 12 (December 1829), 550–55.

On the Grape Vine; communicated by N. HERBEMONT, Esq.

Columbia, S.C. March 19, 1829.

To the Editor of the *Southern Agriculturist*.

Dear Sir,—The following is a copy of a letter to a gentleman in Cincinnati, Ohio, in answer to some queries.—They are such as may be interesting to many of your subscribers. If you think so, you may insert it whenever it is convenient.

I am glad to see that your opinion is, that Sugar is hereafter to be one of the most important staples of our State. I doubt, however, its ever being the case in the middle and upper parts of the State, and I wish this idea may not induce you to think the less of Wine and of all belonging to it, as I fear it is the case with our Agricultural Societies.[1] The misfortune is, that the vine is several years after planting without returning any profit, and we do not seem at all disposed to do any thing for posterity, as it has never done any thing for us. If we ever cultivate the vine extensively, we must have corks, and we have thousands of acres fit to produce the Cork Tree,[2] and scarcely anything else. But who will get and plant them? Our Societies cannot do it; their funds are much too small to do all things that are useful,[3] and our government thinks it ought not to do any thing for the good of the country!!! This doctrine may do very well, and probably is good, though I cannot see how it is so.

Respectfully yours,
N. Herbemont.

1. The antebellum period saw the competition of three plants—the sugarcane, the sugar beet, and sorghum—for the attention of cultivators in the South. Cane required rich, moist soil and warm temperatures; sugar beets proved versatile growers and did not leech nutriment from the soil as cane did; sorghum proved hardier in more northern and up-country fields. All three were grown in South Carolina, though never in quantities to make them staples.

2. *Quercus suber*, a modest-sized oak whose thick, rough bark supplies the material for wine corks. Native to Europe, its center of cultivation has been Portugal. It can be grown in warmer regions of the United States, including South Carolina, but has never been a major object of cultivation.

3. The 1810s saw the explosive growth of agricultural societies in the United States, yet as Herbemont indicates, they had the collegium rather than the corporate partnership as their organization model.

"Cincinnati, Ohio, March 12, 1829"

Dear Sir,—I have three days since received your letter of the 20th ult. by which I am happy to learn that the vine cuttings which I sent you, had arrived safe and sound. I am much obliged to you for your intention of sending a few of your particular kinds; but unless they are such as I cannot get in the Atlantic cities, it is not worth while to send them by mail; particularly because such cuttings as can be sent in this manner are necessarily very small ones. I beg you will not send any, unless it be some of your super-excellent natives, and then I should like to have them fit for grafts. It is an error to suppose the graft never joins to the root or stock; for, if it were so, how could they grow in the first summer with such extraordinary luxuriance, and very often bear fruit then in the highest perfection? I have had them frequently to grow in four months so as to cover a bower seven feet high, and about ten feet square. It is true that grafts, particularly the white grafted on the black, are apt to die in eight or ten years, when apparently in full vigour;[4] but even then I have always observed the insertion perfectly joined; and notwithstanding this disadvantage of their frequently dying so young, it is a great advantage to have so soon a number of fine cuttings to propagate my rare species with.

It is also very convenient to lay one or more of the low branches, so as to have the next year after fine vigorous rooted plants, perfectly independent of the stock on which it was grafted, and I have even made layers of the lower shoots the first summer, and taken them up the very following fall, and planted them with complete success. I have last fall planted out a layer, made last summer, from a graft made the preceding March. This layer is as large as a man's finger, and (the part that was in the ground about two and a half feet long,) as full of fine roots as any one could wish to have.

My reasons for suspecting that the Isabella is not a native of this State, is, that in the very place of which it is said to be a native, no one knows any thing about it, as a native, though it is perfectly well known as a cultivated Grape.[5] Also, that I understand its having been imported many years since by a gentlemen in this State, long since dead. This, if it were clearly proven, would, of course, finally settle the dispute. Also, that it does not thrive as well here as at the North. As for Mr. Prince's mode of judging by its old bark getting loose every year, which he says is peculiar to the American vines, I think his observations have not been sufficiently accurate; for many of the imported vines, indeed all of them, more or less, lose their old bark.[6] It is true that the Isabella loses it more completely than most other kinds. The Bland's or Powell's Madeira, is supposed by some to have been raised in

4. That is, white grapes on black grape vines. Since Herbemont first began grafting in 1819, these cross-grafted vines had only just died.

5. Dorchester, outside of Charleston, was said to be the spot where it was first collected.

6. William Prince of New York. Since Herbemont believed that certain of his grapes, now known to be native-French hybrids, were imported, this observation lacks merit.

Virginia, from the seeds of raisins, which is very possible, and may, therefore, have a very near resemblance to an imported one, but there is not a perfect identity of characters.

On the subject of grafting, I generally graft vines in the cleft, about three or four inches below the surface of the earth; but on very large native roots, I have sometimes tried Mr. Dufour's plan, of boring in the stock with a gimblet, and insert the scion,[7] after having cut it so as to fit the hole, and leaving a shoulder of the back and such part of the wood as was necessary, to shave off to fit it to the hole. When the root is large enough, I have in the same inserted two, or even three scions or grafts. In grafting in this manner, nothing more is necessary besides what is related above, than to cover the stump with clay, well mixed with some cow-dung, about one inch up the graft, and cover the whole with earth, so as to leave only one bud out. The graft for a large stock, ought to have three buds, two will suffice for ordinary ones.

My Madeira vine is not the same as Prince's Violet Madeira;[8] but it is the same as that called by some Warren (or Warrington, perhaps.) It is the best grape which, as yet, I have tried for Wine. I find it no disadvantage at all, that my grapes ripen as early as they do, and during very hot weather. It is true, that in consequence of this, the fermentation goes on very briskly, and sometimes violently; yet I never found any difficulty in it. I only take care to close the vessel as soon as the noise of the bubbling is no longer heard, leaving by the side of the bung a gimblet-hole stopped with a peg, which must be occasionally taken out and loosely returned into the hole, gradually stopping it. I formerly anticipated some difficulties on this score, and I intended to obviate it by seeking a more suitable temperature below the surface of the ground, that is, by digging a deep cellar, for the purpose of fermenting my Wine; but my experience has fully shown that this additional expense is needless. Why, therefore, they should have ceased to cultivate the Auvernot in France,[9] on account of its ripening too early, as you state has been done, I cannot conceive, unless it be that this grape, not ripening at the same time as their others, it occasions a very great inconvenience. I have made Wine for six years,[10] and never have experienced any very great disadvantage from the fermenting my must in hot weather, in my cellar, only dug about one foot below the surface, so that the difference of temperature between it and the house is only two or three degrees. I know that this is contrary to the rules given in all the books I have seen on the subject

7. Dufour, *American Vinedresser's Guide*, 157. Dufour was a reluctant grafter, but noted that it aided in counteracting mildew. Herbemont grafted enthusiastically and programmatically.

8. A variety William Prince received from Madeira, and cultivated by Thomas McCall in Georgia. Prince, *A Treatise on the Vine*, 152.

9. *Auvergnat gris* is still cultivated in Sancerre in the Loire valley.

10. In salable amounts. His experimental wine making began in 1814, and as the letter later states, he made batches with wild grapes in Pittsburgh in the mid-1790s.

of fermentation; but, if fermentation will go on properly for me in spite of all the rules laid down, I cannot help it.

I should much like to have the grape which you state having procured at Lancaster, Pennsylvania, taken from an Island in the Susquehanna, and I beg you will put me in the way of getting it from that place,[11] for I despair of ever getting it from you, unless it were sent to Charleston, South Carolina, by the way of New-Orleans, which is the only route by which we can fully make an interchange of what each of us has that is worth sending so far. In this case the cuttings would have to be made of full length, viz: from eighteen inches to two feet, with the ends sealed and packed in a box with fresh moss; and this must be done in the fall, for if you wait till the frost permits you to open the ground in the spring, they would arrive here two months later than they ought, besides which, they would have grown and filled the box with young shoots, which would be too tender to be exposed to the open air, and would, moreover, run the greater risk of being broken off. If there is a possibility of communication by this route, inform me of it, and next fall I shall do my part here, while you are doing your's there.

I do not think it advisable in this country, where Wine bears a good price, to reduce the quantity, by evaporating the superfluous moisture of the grapes or of the must, when they do not contain a sufficiency of saccharine matter to make a sufficiently strong Wine. A much more suitable method is, to add Sugar according to the deficiency; by this means the quantity of Wine is rather increased than diminished. I never have seen but once, mashed grapes or must so full of saccharine matter, as to be very thick and not able to ferment, and this was in Pittsburgh, Pennsylvania, about thirty-five years ago. Having found an exceedingly fine wild grape in the woods near the city, I gathered enough to make about ten gallons of Wine. The grapes were so rich that, though I kept it about two or three months, it never fermented, and I never thought of adding water, or such other ingredient as it might have been deficient in, such as tartar, mucilage, &c. to it, which in all probability would have answered the purpose. I should now give a great deal to have

11. "About 15 years ago, there were obtained some cuttings of a grapevine which was discovered by Mr. Dininger, on an island in the Susquehanna, called Brushy island. The island upon which this vine was found is uninhabited and uncultivated, the soil alluvial, and subject to overflow. The vine runs upon a large sycamore, spreading through the top branches to the height of forty or fifty feet from the ground, and appears to have grown with the tree, the root being from twenty to thirty feet from the tree. The wood, leaf and early shoots very much resemble what is called Miller's Burgundy, also the fruit, in colour and flavour; but in size it is much larger. It was observed, that the fruit obtained in September 1827 was a deep brown; that of the next season, some were brown and others a deep black. The difference was accounted for by Mr. Dininger, who stated that the brown bunches were those that were shaded from the sun by the thick foliage of the tree; but those exposed to the sun were black. Some of the bunches procured that season were very fine, and set closely upon the stem—fruit the size of the Powel grape, skin thin, no pulp, a sweet water, seed small, flavour equal to the celebrated 'Black Prince', and not inferior to any foreign grape for the table." John Fanning Watson, *Annals of Philadelphia and Pennsylvania in the Olden Time* (Philadelphia: Elijah Thomas, 1857), vol. 2, chapter 24.

this grape here; but on a visit to that place about fourteen years since, I looked for the vine, but found a house where it used to grow. Such a grape is worth a journey of one thousand miles to obtain it.

I do not know Major Adlum's Catawba, but I expect to get some this spring. He certainly esteems it very highly, if he says that his introducing this grape is as beneficial to the United States as if he had paid the national debt. Although this is setting rather too high a value on his services, he is highly deserving; but this will not be appreciated until it is too late for him to derive any advantage for all his exertions, at all commensurate with his deserts. I cannot say, however, that I admire his making imitations of all the most renowned Wines. This looks too much like quackery, and is unworthy of his merit. Why not be satisfied with any good wine, sui generis, which the country, soil and climate permit to make, and which, though different, may be of equal value, or perhaps superior to the imported ones?—This brings me to notice your skepticism as to the influence of exposition and the nature of the soil, on the quality of the Wine. Your's is almost an unpardonable apostasy on the received doctrines, and I am in hopes that, if you are not open to conviction from the experience of others, your own will compel you to recant before long. I am so fully convinced of the influence of the soil on the Wine, that nothing but an experience longer than my future life will probably be, could possibly satisfy me of the contrary, and that I hesitate not to assert that no traveler in Spain whom you mention, who says a clay soil is best, and a gravelly soil is the worst, but has stated precisely the reverse of the truth, and the gentleman whose account I have read, depending solely upon verbal inquiries, has exactly taken the contrary of the information given to him. He certainly misunderstood his informer, or the latter misled him through mischief. A light loose soil, through which the roots of the vine can pass freely and deeply, is most certainly the best, and the stiff clay the worst. The vine may grow very luxuriantly in a rich, moist soil, but its fruit will be found small and poor. A mixture of both soils may perhaps be the best for the production of very abundant crops; but, except in very particularly favoured spots, the quality will be found indifferent. As regards exposure, there are certainly many exceptions to the general rule, and the most remarkable one is, that a part of the best Champaign Wines are produced from vineyards exposed to the North; and this is the more striking, as this part of the province of Champaign is nearly the last vineyard towards the North. High and open places, and the sides of hills, are also considered a sine qua non for a vineyard, and yet some of the best vines of Burgundy are produced on level ground, though probably high. These anomalies, besides many others which might be named, however, only show that the other circumstances of the excepted spots are in every other respect extremely favourable. Now, in this country, where the heat of our summer is so intense, I think that other things being suitable, a Northern exposure may be advantageous; but on account of the very heavy rains of our climate, I do not think it advisable to establish

a vineyard on the steep side of a hill; though in Europe such a situation would be considered eligible. Indeed we must always suit ourselves to circumstances which are peculiar to us, and in this, as in everything else, experience is the best guide.

By the description of your soil, it does not appear to me to be the very best; but if it be very dry, and the clay not too retentive of water, it may very do well, particularly as you have been at the expense of trenching it three feet deep, and you really deserve to succeed.

I do allow my Wine fully to ferment, first in the vat with the stems, seeds and skins, for about twentyfour hours, which is a very short time, though I fear in the very hot weather during which I must ferment it, that a longer time would injure it. After this, the juice or must, is put in casks, not filled by four or five inches, and the bung-hole merely covered with a few grape leaves, loaded with a double handful of moistened sand. This acts as a valve, and the fermentation goes on audibly for two or three weeks more.—During this interval the casks are gradually filled, till at last, when the sensible fermentation has stopped, they are filled to within an inch or so, and bunged tight, not forgetting the gimblet-hole by the side, as mentioned above. Six or eight weeks after this, taking advantage of clear and cold weather, I draw off the Wine into other casks, prepared by being fumigated with a sulphur match.

Cuttings, with one single bud, will not do well here without a great deal of trouble and attention, on account of our very dry and hot springs, unless a place is selected where they could be conveniently watered, until they have sent their roots sufficiently deep to do without it. Otherwise, it is an admirable method of multiplying vines very extensively.

I have the Scuppernong grape, but it does not do well with me as yet, probably, because I did not plant it in a suitable soil. I am planting some this spring in a moist, sandy place, where I hope they will do better.—The Clendenon vine to which you allude, resembles it only in the colour of the bark.[12] None of the Scuppernong Wine which I have tasted pleased my palate, and it is liable to produce headache, which is probably owing to its being unskillfully made, and to having an admixture of peach or apple brandy. The grape is very sweet, but has too strong a taste of honey, which remains in the Wine for several years, after which, it certainly improves. I think with proper skill, and no brandy of any kind, but especially peach brandy, a very good Wine might be made of this grape. I am decidedly of opinion that brandy added to Wine is destructive of some of the best qualities of Wine. If there be a fear lest the Wine be not strong enough made of this or any other kind of grape, it must be for want of saccharine matter which may be lawfully added, provided it be done in the vat, so that the whole process of fermentation will go on

12. Local name for a type of *Vitis rotundifolia*.

with the Sugar, by which means it is converted into alcohol, and forms an identity with the Wine; whereas, when brandy is added, it is always a mechanical mixture, unless, perhaps, it should be added in the vat, which I have not tried.

The Sugar does not make the Wine sweet, but strong bodied. If it were added after the fermentation is over, it would then make a sweet Wine. When, however, the vines have acquired a sufficient age, and the grapes are allowed to get fully ripe before they are gathered, they will, most probably, contain a sufficient quantity of Sugar, without any further addition. At any rate, a light wine, if strong enough to keep perfectly sound, is preferable.

I am, respectfully, your's,
N. Herbemont.

Cultivation of the Grape.

August 12, 1829

This letter on the challenges facing cultivators of the vine could have been written to any one of the persons who had recently organized the Maryland Society for Promoting the Culture of the Vine. Herbemont's closest friend in Baltimore was George Fitzhugh Jr., the future sociologist of the South. Usually Herbemont addressed him by name in correspondence. This writing has more the tenor of an informational discussion than a familiar letter. Perhaps Dr. John S. C. Monkur, corresponding secretary of the society, may have been "the friend." Herbemont appears to have written in response to a formal request for information—one of the purposes for which the society had been organized. This letter details Herbemont's method of grafting scions onto native rootstocks that he developed in 1819. In 1828 William Coxe of New Jersey published a description of a similar practice followed in Burlington since 1821.[1] Throughout the letter, Herbemont dispensed wisdom, not wishful thinking, candidly indicating that grape culture entailed an unending contest with hostile elements in the environment. Published in *American Farmer* 11, no. 47 (February 5, 1830): 371–72.

Extract of a letter from N. Herbemont, Esq. to a friend in Baltimore, dated August 12th, 1829

According to your desire, I shall give you a few hints on the subject of the culture of the vine, suggested by my experience. The frost is, as you express it, our great enemy; but there are several others, which we have to give constant battle to, if we hope to conquer them. These are—birds, insects of various kinds, and too much rain in summer. However difficult it may be to conquer them all, the frost and the rain present the greatest difficulty. Any one who undertakes the cultivation of the vine on a large scale, must make up his mind to meet with frequent disappointments. He must know that the produce of the vine is every where precarious, more

1. William Coxe, "Culture of the Vine, Burlington, July 22, 1828," *American Farmer* 10, no. 21 (August 8, 1828), 165–66.

or less so according to circumstances of climate and soil; and also according to the number of persons interested in the destruction of its enemies. On the other hand it is perfectly true, that the crop is sometimes large beyond all anticipation; so that if a vigneron should make but one crop in three years, still his average profit would far exceed that produced by any other culture usual with us. For this reason, and others very obvious, it is a matter of no small consequence, to select well the particular kinds of grapes, which yield the best wine, and in the greatest quantity, and those which are least subject to rot and to other casualties; also to make a judicious selection of soil, and particularly of situation. The experiments necessary to make a good selection, are very expensive, and require many years to be perfected. Happy is he, in this as in most other respects, who can avail himself of the experience of others. As to situation, the same instructions given 2000 years ago, are still the best, viz. a high, dry, airy spot, with a deep light soil, sandy, gravelly, or calcarious;[2] but sufficiently loose for the roots to strike deep in search of moisture, and enable the vine to resist our great heat, and long droughts. The side of a hill is chiefly recommended; but on account of the very heavy rains to which we are liable in summer, I would not select a steep hill-side, lest the soil be soon washed down. The exposition also requires consideration. That which is least liable to be affected by later frost, is to be preferred. A good mark is where a peach orchard never fails of producing fruit. There are spots where fruit trees never fail of bearing a plentiful crop, such cannot be purchased at too high a price for a vineyard; for then a failure would scarcely happen. If my vine-yard were secure from late frost, and my Madeira grape never to rot, or to rot slightly, I would not exchange it for a sugar plantation.[3] And there are situations where it never rots, particularly when, trained high, the bearing part running on a trellis, placed horizontally about seven or eight feet high.

I have hitherto preferred planting cuttings early, that is, in November or December; I have also succeeded very well in March and April, when the cuttings had not pushed out their buds too much; but not so well in the intermediate time. Any mode by which the cuttings could be kept alive without growing, until the danger of frost is past, would secure the growth of almost every cutting. For this purpose I would suggest to those who can conveniently do it, to keep their cuttings in an *ice-house*. They ought to be put in barrels or boxes, buried upright in clean sand, leaving one or two buds out. I have not had the possibility of trying this experiment; but am almost fully satisfied, that cuttings kept so cold as not to vegetate, moist enough to keep them alive, in clean sand to prevent their growing mouldy, but not so wet as to rot them, (of which there can be little danger in an

2. With a high degree of calcium carbonate or calcite in it.

3. The bulk of sugar produced in the United States during this period grew in Louisiana. An adage from antebellum Louisiana: "It took a rich cotton planter to make a poor sugar planter." It was the most profitable commodity in general cultivation.

ice-house,) may be planted or grafted late in April, or even in May, without losing one in twenty. This would save a great deal of trouble as it is very useful, when cuttings are planted or grafted earlier, to cover them entirely with earth to keep the frost from the bud, and when the danger is over, take off gently the earth which had been thus drawn up. This must be done very carefully for fear of breaking off the buds, which have then begun to shoot.[4] I usually plant my vines in rows about ten feet apart, and seven or eight feet between the rows, planting two cuttings in each place, the tops close together, and the bottoms as far apart as convenient. If both take I transplant one, when two years old, in a missing place. A good way also is to prepare a piece of ground by manuring and deep digging, and plant the cuttings in nursery, in rows 2½ or 3 feet apart, and 6 to 8 inches in the rows.[5] In this case it is best not to plant them so deep, as when they are to remain. Eight or ten inches is deep enough, and they take root better than when planted deeper. Ground that has been well manured and cultivated the preceding year or two in potatoes, is well prepared for a nursery. When the vines are two or three years old, transplant them where they are to remain, taking care to have the holes dug first, and to take up only a few vines at a time, that the roots may not be long exposed to the air or sun. By digging them up with all their roots unhurt, and planting them very carefully, a *foot* deep, in holes at least two *feet* deep, and *half filled up with good mellow earth*, the vines will all take and scarcely suffer at all by the removal. To propagate the vine speedily and effectually, I would recommend grafting to those who have stocks fit for the purpose. In the country wild vines of any kind will do very well—even in the woods.[6] Cleft grafting in the root, a few inches below the surface is the most convenient way; but when the stock is too large to be cleft, saw it off horizontally, and *with a gimlet make one or two holes in the stock about 1½ inch deep*, then take the scion, cut through the bark, and as much of the wood as may be necessary to fit it to the hole, and drive it in; then with a little mixt clay cover the stock, and about an inch of the graft, and cover the whole with earth, leaving only one bud above the ground.

NOTE: The vine will bear grafting without joining the bark of the scion with that of the stock—the graft will grow with the utmost vigour, and frequently produce fruit the first year. They will at all events produce a number of fine cuttings the next

4. [Editor's note] Might not the trouble of uncovering be avoided, by using covering of so light a nature, that the shoot would pass through it?—Ed.

5. [Editor's note] There is a gentleman in this city who raises a considerable number of vines every year in nursery, some in beds prepared for the purpose—the plants nine inches apart each way; and others in boxes and in tubs, made by cutting flour barrels in two, eight or ten cuttings in each. They may be transplanted from these without a fibre being injured. The cuttings he uses are very short—frequently with a single eye. They require, however, to be watered, if the weather is not seasonable.—ED

6. By happenstance the native vines around Palmyra tended to have been either *Vitis aestivalis* or *riparia*, both of which possess strong resistance to phylloxera.

winter. I have also succeeded well in making layers[7] from side shoots, that grew very strongly near the ground, from the graft, laying them when green, in the summer following the grafting, and separating and transplanting the following spring. I have also dug up wild vines in the woods, even after they had begun to grow—in April *when they had leaves on;* grafted on them, and planted them carefully. I have now several of them grafted thus last April, that have *ripe fruit*. It is therefore advisable never to root up a vigorous vine because it does not bear good fruit, but to keep them for grafting. I grafted last spring two or three hundred Madeira scions in the roots of the Isabella, (which is nearly worthless here,)[8] and these grafts are now, many of them, with fruit on them, from twelve to twenty and even thirty feet long, and proportionally thick.

This Madeira, also called Warren,[9] is the most valuable grape that has yet come to my notice.—It is certainly the greatest bearer, and makes the best wine of any I have tried. It is also the most juicy, and is as rich as any I know. Its only fault is, as observed above, that some seasons, this rainy one for instance, it rots a good deal. I have however, some old vines of it that do not rot, and others that are perfectly sound three years out of four.

N.H.

7. Bringing portions of the vine in contact with the soil so that they form roots; these are later sectioned from the mother vine and transplanted.

8. As a table grape. The Isabella had a reputation among northern growers of being extremely productive. Herbemont had difficulty getting it to set fruit.

9. Or Warrenton, from the place in Georgia where it was extensively cultivated.

Letter to Edward Stabler on Wine-Making.

September 9, 1829

Edward Stabler (1794–1883), the recipient of this letter, was a Quaker agriculturalist and postmaster at Sandy Spring, Maryland. Inventor of a seed drill and a corn-husking mechanism, he stood at the forefront of the movement to apply scientific technology to agriculture. Later he would become the most skilled seal-maker in the mid-Atlantic states, creating the seals of both houses of Congress, the State Department, the Post Office, Supreme Court, Treasury Department, and virtually every other branch of the U.S. government. He owned Harewood, a plantation in Montgomery County, Maryland. Like Herbemont, Stabler had an abiding concern about soil exhaustion and published "Renovation of Worn-Out Lands," the first-prize essay in the 1848 contest held by the *American Farmer and Spirit of the Agricultural Journals of the Day*.[1] Published in *American Farmer* 11, no. 30 (October 9, 1829).

Columbia, S. C. Sept. 9, 1829

EDWARD STABLER, JR.

Respected Friend,—I am obliged to Mr. Allen Jones Davie,[2] for procuring me the pleasure of your correspondence; for I make no secret of my being an enthusiast in the culture of the vine. I should have answered sooner your letter which I received about a week since, but I was much engaged in gathering the last of my grapes (the Bland Madeira or Rose grape) for wine and raisins. The grape you call "Perfume grape"[3] I have never seen; but I got two cuttings of it last spring, which I grafted, and they have grown so well that I have very little doubt I shall see the fruit next year. If it be desirable I can send you one or two cuttings of it next winter with others. Although the name by which you call it may be a very good and appropriate

1. Vol. 4, no. 4 (October 1848), 97–104.

2. Major Allen Jones Davie (b. 1793), planter at New Hope Plantation, Halifax, North Carolina, where he maintained Sir Archy, the famed quarter horse, at stud.

3. "The vine grows on a small island of the Roanoke. . . . Its colour is purple, about one third larger than the common grape of the woods, slightly elongated. . . . In its flavour it is unrivalled, and when eaten diffuses a most grateful perfume." Prince, *A Treatise on the Vine*, 211.

one, I have called it, "General Jones," or which is better "Allen Jones," which is the name of Mr. Davie's grand father, who first noticed this grape. This name suits the better, that it is also the first name of Mr. D. who is now bringing it to notice. I hope it may prove as valuable as Mr. D. anticipates. The choice vine to which Mr. D. alludes, may be the native one which I call "Arena,"[4] from its being abundant in our sand-hills, or one (origin not known) called "Lenoir," from the person of this name who first cultivated it near Statesburg in this state. This is a very superior grape not subject to rotting. It makes an excellent red wine. Or it may be my Madeira, which, if it were not liable to rot, I should be tempted to call the most valuable grape in this country. I once made very delicious wine from the Arena; the second trial did not succeed so well, from causes too long to give here, and I have now about ten gallons made last week, which I hope may be as good as the first. From one single vine of Madeira, I have made last week about twenty-five gallons. It is, however, a very provoking grape, for it rotted so much this summer, that instead of 1000 or 1200 gallons I had fair reason to hope I should make, I only made about 125. The wine it makes, and which I call "Palmyra," from the name of my farm where my principal vineyard is, resembles the kind of Madeira called the "Juice of the grape," which is Madeira without any addition of brandy.[5] Several of my friends, too partial, no doubt, have paid it the same compliment as your friends paid to yours, viz: that it is the best American wine they have ever tasted. Many prefer it to Madeira of very good quality. I have always sold it at three or four months old, at $2, per gallon. I never put any brandy in it at all, as I think brandy deprives wine of one of its most valuable qualities, which is that sprightliness, and life which is seldom found in any of the foreign wines except the French. Yet, for want of good cellars, where no change of temperature is experienced, and also to accommodate ourselves to the vitiated taste of the country, which can only be changed gradually, I have thought it best to make strong wines instead of light ones, which when sound are certainly preferable.[6] This strength is obtained by an addition of sugar. This is added immediately after mashing the grapes and before the fermentation has commenced. I then suffer the whole to ferment in the vat from twenty to fifty hours, or more according to the temperature of the atmosphere. The must, being then separated from the murk, which is then strongly pressed, is put into a cast not filled by three or four inches according to their size. I then put three or four grape leaves over the bung hole, and load them with a double handful of moistened sand.

4. *Vitis aestivalis*.

5. This was the prevailing style of Madeira served in France prior to Herbemont's removal to America. As historian David Hancock has shown, the style of Madeira altered at the end of the eighteenth century, and was refined in the nineteenth century to become that velvety rich drink redolent of butterscotch, coffee, citrus, and cocoa. Perhaps Mannie Berk's historical series of Madeiras are the only wines of recent vintage that capture the most esteemed of early American wines.

6. Herbemont's cognizance of the problems posed by inadequate storage of his wines by its purchasers reveals his extraordinary concern for the reception of his vintages among devotees of wine.

This acts as a valve so as to be raised when the fermentation is very violent, and it immediately falls down so as to keep the vessel as close as it is prudent that it should be. When the fermentation begins to be more moderate, which is in a few days according to the temperature of the air, I add to the casks some of the must, so as to diminish by about half the vacancy first left in them. When by applying my ear close to the cask, I no longer hear the fermentation, I fill them again to within about one inch, and stop them close with a bung. I then make a gimblet hole on one side of the bung, about an inch or two from it, and this is stopped with a peg which is taken out occasionally to let the gas escape, which otherwise might burst the vessel. Every week or two after this, it is proper to fill up the casks; for the liquor settles considerably, and about two months afterwards, taking advantage of a clear frosty day, I draw the wine into other casks which have previously been fumigated with a sulphur match. The wine ought after this to be racked again once or twice a year, for one, two, or three years, when bottling it would be proper. Some wines are not fit to be used for several years, others may be drank after three months, which is the case with my Palmyra. It improves, however, considerably as it grows old.

I was fully apprised of the formation of a society for the promotion of the culture of the vine in Maryland, and the officers of it have done me the honour, about a year since, to elect me an honorary member of their society.[7] I had been for some time previous in correspondence with one of their members, George Fitzhugh, Jr. to whom I sent several times cuttings of various of my vines, and I find by the names of those in your letter to me that he, or the society, sent you some of them. Those from me are "Madeira"—"Bordeaux table grape," called by some here "Hungarian," "Bosc." This I named from a gentleman in France.[8] "Sauvignon,"[9] "Olivette,"[10] "Melier,"[11] "Deo-data." This I named after one of my brother's Dieudonné, and "Lafitte."[12] This last was brought by a friend of mind from the vineyard of Lafitte, which produces the highest priced claret in France. It does not, however, succeed with me as yet. The Bosc and Deo-data, having lost their number when sent among 264 kinds by Mr. Bosc, I gave them these names. I am much obliged to you for your kind offer of cuttings of such vines as I may want and you may have; but the obligingness of Mr. Fitzhugh has scarcely left me any thing to desire in this respect. I have not, however by their names at least, the following: Schuylkill muscadel,[13] Muney red, Imperial, White pulp, Coral, German grape, Black Prince,

7. He was elected a member immediately after the formation of the society.

8. Louis-Augustin Guillaume Bosc d'Antic.

9. Sauvignon Blanc.

10. Olivette Noire, a variety grown in Provence more for table consumption than wine making.

11. Melier Blanc—"White Morillon"—used to make white wines in eastern France and western Germany.

12. Probably Cabernet Sauvignon, which made up 80 percent of Château Lafite's blend.

13. Alexander grape, same as the Vevay below. Most of the other varieties were local names for native varieties that cannot now be determined.

Tenier, Damascine, Vevay, Rhenish grape. If you can therefore, very conveniently send me two or three cuttings of such of those as are worthy of cultivation, I shall be much obliged to you. It would be most unreasonable in me to expect that you could send me any of those which you are to receive from the Mediterranean this winter; yet, enthusiasts, you know, have no moderation, if you could give me one of each long enough to graft, I may be able the following winter to return you four for one of the same. But, I pray, do not do it unless it is most convenient. I can send you any quantity of cuttings of my Madeira, and of the Arena, and a few of the Lenoir. I have all the kinds mentioned in Alphonse Loubat's catalogue, fifty-eight in number,[14] and I can send you a few of some of them if you desire it. As I know, as yet, very little of their good or bad qualities, it would be better probably to wait a year or two till I can have formed an opinion of them.

The grapes are not usually separated from the stems. It is even asserted by most writers and practical men on this subject, that the stems being fermented in the vat with the berries, give the liquor a greater durability and render it more wholesome, by imparting to it a slight degree of astringency. The stems undoubtedly contain much tannin. This is, however, not an undisputed opinion; for many are in the practice of separating them, by which means they pretend the wine is much more delicate and pure. This may be true, and yet not the most desirable; for their opponents assert that wine made without the stems are liable to many disorders, which the fermentation with the stems prevent. As is generally the case with disputants, the truth lies probably between them. My practice is to put in stems and all, except such bunches as have the berries very scattering, in which case I separate the berries, and throw away the stems. In gathering the grapes, the rotten berries and such as may not be fully ripe are carefully cut out, and in doing this the few scattering berries which may be on the bunch are easily pulled off and deposited in the vessel intended to receive them. No spirit used; but sugar if necessary as mentioned above. The must of my Madeira and of the Arena, usually weigh by the areometer ten degrees, a little more or a little less, according to the degree of maturity; ¾ of a pound of sugar added per gallon, by guess, is generally sufficient to raise the weight to fourteen or fifteen degrees, which is very fully as much as is proper to add. Less would probably make a better and lighter wine; but it would perhaps have to be kept in a cool cellar. Great force is usually applied to press out all the juice. A screw press is the best; when a large quantity of wine is made, it is best not to mix that drawn from hard pression with that proceeding from the vat without effort. That from the press is harsher, I never have kept them separate.

14. Loubat, a French merchant who in the mid-1820s created a forty-acre vineyard on Long Island composed entirely of *Vitis vinifera* vines, composed a catalog of his cultivars: Alphonse Loubat, *The American Vine Dresser's Guide* (New York: G. & C. Carvill, 1829). Not to be confused with Dufour's book of the same name. See Pinney, *A History of Wine in America*, 187–89.

I am surprised at your mention of 2½ lbs. of sugar which you added to your must, (I presume it is per gallon) either the Catawba and Muney are poor grapes, or they were far from ripe.

To make good wine, the grapes ought to be suffered to attain the highest degree of maturity possible; far beyond that which is reckoned sufficient to make them pleasant to eat. It is during the latter degrees of maturity that the grapes acquire their full portion of saccharine matter, and this fine flavour and aroma, by which some wines are justly celebrated and distinguished from the great bulk of wines. It is better to suffer some loss by bees, wasps, and other insects, than make an inferior wine. As you seem in earnest in the cultivation of the vine, let me recommend to you to spare no pains or expense in the selection of the proper spot for your vineyard. There are spots in every country less exposed to late spring frosts than others. These are to be preferred. Although we find the native vines growing in all sorts of soils, and particularly on moist banks of water courses and marshes, and that the imported ones may also grow well in such situations; they nevertheless seldom produce a good rich fruit, free from rot or mildew, except on a loose deep soil, either naturally so or made so by art. The place of a vineyard ought also be high, airy, and as distant from forests as possible, that a free, dry air may circulate among the vines. The vines, ought also in this country be planted at considerable distances from each other, on account of the great luxuriance of their growth. I have great doubts of the correctness of the general opinion in France that no good wine can be made but from such grapes as are raised near the ground. This you will think, perhaps, a most vile piece of presumption; but what may be true in a cold climate, like that of the North and middle of France, may not be true here. It may be necessary there to have the heat reflected from the ground to mature the grapes, not even as fully as they may ripen here at the height of seven or eight feet.

I have written a short treatise on the culture of the vine, &c. for the *Southern Agriculturist*, published in Charleston, S.C.[15] and in this monthly periodical, are occasional pieces of mine on this and other subjects. My views are there more fully expressed than they can be in the compass of a few letters. It might be, perhaps, an advantage to you to be a subscriber to it, and take it from the first; for my essay is the very first article of the six or seven first numbers. It was begun last year. The price is $5 per annum, payable in advance. Application to be made to the publisher, A. E. Miller, Charleston, S. C. My opinion of the raising of vines from the seed is, that it only suits those who are extravagantly zealous in the cause; for the purpose of obtaining new varieties at the expense of a great deal of trouble, patience and perseverance. Like most other fruits, the vine seeds do not produce grapes, otherwise similar to the parent than its botanical characters. It may chance,

15. "An Essay on the Culture of the Grape Vine, and Making of Wine; Suited for the United States, and More Particularly for the Southern States," January–July 1828.

however, to be superior. Another great disadvantage is that the greatest part of the seedling vines only produce male flowers, and are not, therefore, fruit bearers. These, nevertheless, as also the inferior ones of the bearers, need not be left; but may be used to graft the valuable ones on them. In this manner I propagate very advantageously foreign and other grapes, by grafting on native vines dug out of the woods, or even while standing in the woods. This gives me the first year very large vines, and frequently fruit. I usually graft three or four inches below the surface of the ground, by splitting the stock and inserting in the common way a scion with two or three buds, covering the remaining part of the cleft with a bit of leaf or rag to keep the earth from falling into it. I cover the whole with earth so as to have it a little higher than the surrounding surface. When the stock is too large to be cleft, I bore one or more holes in it with a gimblet, trim the scions so as to fit the holes, leaving a little shoulder of bark on them, drive them in gently and cover the whole with earth as above.

The vine is, as far as I know, the only plant that will take by grafting without the precaution of making the outside bark come in contact with each other, and therefore it does well according to the last mode mentioned. I prefer grafting late, if the scions have been kept alive without growing, till the buds of the stock are ready to burst open. I have even grafted when the stocks were in leaves, and shoots a foot long.

Yours, with respect,

N. HERBEMONT

On the Proper Distance for Planting a Vineyard;

Read before the United Agricultural Society, of South-Carolina.

December 7, 1829

At every annual meeting of the Agricultural Society of South Carolina from 1819 to 1829, Nicholas Herbemont presented a report on the progress of his experiments in viticulture. His report in 1826 and the one below possessed sufficient formal shape and topicality to merit publication. The subject of vine spacing in American vineyards had occupied grape cultivators since they realized that the vigor of growth in American vines made Old World close spacing impractical. John Adlum had recommended a spacing of six feet between vines. John James Dufour, following the advice of Jean-Antoine-Claude Chaptal,[1] planted vines closely—from two feet eight inches to three feet—with rows spaced from six to eight feet apart.[2] Herbemont took issue with both. Toward the end of his speech Herbemont engaged in an uncharacteristic display of exasperation at the passivity of the state legislature in promoting agriculture. Published in the *Southern Agriculturist* 3, no. 4 (April 1830), 197–202

"Columbia, December 7, 1829.

To the President and Members of the United Agricultural Society of So. Carolina.

Mr. President and Gentlemen,—Having hitherto had the honor of making to you at each session of your Society a report of my progress in the culture of the Vine, and the success I may have had in making Wine. I think it becoming that I should

1. Jean-Antoine-Claude Chaptal, *A Treatise upon Vines; translated from the French by John H. Sargent* (Charleston: John H. Sargent, 1811).
2. Dufour, *American Vinedresser's Guide*, 121.

crave your indulgence, and continue to report yearly to you, as long as it may be useful to do so.

In the culture of a new object in this country, one in which experience is to be acquired, unexpected difficulties will arise from soil, climate, and their accidental circumstances. One of these was the impossibility of judging a priori of the proper distance at which vines, yet untried in the large way in this climate, were to be planted. In consequence of this, although I planted those which I presumed the most likely to produce good wine, farther apart than is done in France, I soon found that the very great luxuriance of their growth required for them a still greater distance. Many years were necessary to establish this, and this was but one of the difficulties to be encountered; for experience soon proved that many other particulars were to be attended to, so as to suit, if possible, all probable contingencies. Thus great distance had, while the vines were yet small, a great appearance of lost ground, and when they had become large the disadvantage of exposing them, with their supports, to our high winds, which frequently prostrated them to the ground, to the manifest injury of the crop, as also of the vines themselves. The remedy to this was additional expense. Again, during very dry seasons, vines planted too close are much less injured than during wet ones; because the shade produced by close planting, prevents in a great degree the evaporation of moisture from the soil; so that, although too much moisture is injurious, it is not then sufficient to produce the rot in the grapes, to which, I think, it is chiefly to be attributed; when in a rainy summer, the close covering of the ground prevents the due evaporation, and therefore detains in it a superabundant moisture, which causes great devastation by the rot; and this was the case of the last season. From this follows the necessity of obtaining that state which will produce the least disadvantage under any circumstance. I never have known great heat, unconnected with great moisture, to be at all injurious to the grapes; on the contrary, a hot and dry summer has generally been found productive of the soundest as well as the richest grapes, and our summers are oftener dry than wet. That state of things, therefore, which will permit the evaporation of the injurious moisture in the soil, promises fairly the most beneficial results; and this must be obtained by a sufficient distance. The grapes are perfectly well matured without being open to the direct rays of the sun; but the sun, or at least, heated air, must circulate freely over the ground.

I have of late years planted the vines ten feet by seven or eight feet, and I am satisfied that a greater distance would be still better. Many considerations induce me to believe that the most advantageous mode of planting a vineyard in this country, is to plant three or four rows ten feet apart, and the same distance in the rows, then to leave a vacant space equal to, or more than that occupied by the vines, then repeat the planting of three or four rows of vines, followed by a similar vacant space, and so on the extent of the ground. The vacant spaces need not be lost; for they may be planted in small grain, peas, potatoes, or any thing else of low

growth, which will not intercept the free course of the air between the vines. That this mode or planting will be followed by full success, I am warranted in asserting as my firm belief, particularly if the ground for the vineyard has been selected high and airy; for I have vines, situated accidently, according to this arrangement, which never have failed for the last six or seven years in producing an abundance of excellent fruit; and notwithstanding the great unfavorableness of the past summer, two of those vines, one of which is yet very young, produced grapes enough to make thirty gallons of first rate wine.[3] The grapes on these two vines did rot in a slight degree for the first time since they were trained according to the manner I have finally adopted; but on my other vines it was very clear that the more their situation differed from the latter, the greater was the destruction by the rot. This was to this degree, that although I made only one hundred and sixty gallons of wine, this was much more than I anticipated until a few weeks before the time of vintage, when the rains ceased, and the few grapes that were spared, came to great perfection. Thus it is that we ought to avail ourselves of our very failures and derive instruction from them.

My labours, gentlemen, in the pursuit of the successful cultivation of the vine, have been and still are great, and, if I may not flatter myself, on account of my age,[4] to reap the full benefit of them, I may hope that my exertions will not be lost to those who may follow me, and that my experience will enable them to plant vineyards and progress in the pursuit of their object, with ease and comparative certainty of success, without having other than ordinary difficulties to overcome. I am happy to have it in my power to state that, although my success has been as yet only partial, several vineyards have been, and continue to be planted in this vicinity and elsewhere,[5] which promise to give permanency to this most interesting culture in this country; and it is to be hoped that the labours of the enterprising gentlemen who are planting them, will not only be crowned with full success; but also with the blessings of posterity. Among these, I must take the liberty of

3. [Author's Note] The space which these two vines cover is seventy feet, by sixteen feet. Which, make the product at the rate of 1120 gallons per acre. There is no reason why an extensive vineyard as well situated and similarly treated will not produce similar crops, when they have attained the same age. One of these vines is twenty years old, and the other only about nine. It is necessary to repeat, that these vines, particularly the older one, never have failed bearing such a crop as they have this year, since they have been trained in the manner they now are, and that is six or seven years. Neither have the grapes rotted during that period, except this year, notwithstanding which they produced at the enormous rate as above, which at $2 per gallon, is, for 1120 gallons, $2240 per acre.

4. Herbemont was fifty-eight years of age.

5. Herbemont no doubt was thinking of the plantings of James Guignard, Charles Neuffer, William Ellison, and Abraham Geiger. Shortly after Herbemont's death, James McDonald and James Achille de Caradeuc consolidated viticulture in the vicinity of Aiken. The Aiken Wine-Growing Association had over one hundred acres of vines in cultivation, garnering a profit of $800 per acre. John Hammond Moore, "From Vine to Keg: A History of Wine-Making in South Carolina," *Sandlapper* (Spring 2002), 51–55.

distinguishing one of them, Abraham Geiger, Esq. of Lexington district,[6] who has now upwards of thirty acres in vines, whose zeal, when it shall be duly assisted by more experience, will be rewarded by the richest returns.

The longer I live, the more I see cause to lament that our Legislature has not thought this object of sufficient importance to afford ample means to make fuller and more extended experiments in this culture, either directly, or through your agency, gentlemen, by endowing your Society with adequate means to promote such and other similar objects. If the experiments, so far as I have made them, have been both laborious and expensive, how much more would they have been so, if I had possessed the means of extending them, as far as I was most anxious to do, in different parts of the State, in different kinds of soils and situations, how can I forbear still to regret my inability to do what I conceived would almost necessarily have been followed by incalculable advantages to the State. We are more and more sensibly alive to our deficiencies in an effective population, and, most incredibly astonishing, we do not take one step to remedy the evil. A country necessarily and almost exclusively agricultural, with a population thinly scattered over a large extent of territory, only supported by Societies who vainly make great efforts, for they are without funds; those energies are perfectly insufficient to the production of the good required; because they are denied the sinews which alone are capable of producing successful exertions, is an anomaly which indicates that its primary interest is forsaken by its parent, that points directly to something fundamentally wrong, and, I fear, betokens something which the stoutest of us dares not to look in the face!

I beg pardon, gentlemen, for this unbidden ebulition of my feelings, it forced itself upon me in spite of all my endeavours to smother it. I beg it may not be thought indecorous in a country where it is not only the right, but the sacred duty of every man to express his opinions, when they may possibly produce good.

Enough of this. My theme is changed, and I must congratulate the country on some glimmerings of prosperity; though, perhaps, I may be too hasty in this. We must, however, hail with joy the feeblest dawn of bright prospects; we must rejoice at the prospects of success in the culture of the Sugar Cane in this State, and even in this very neighbourhood, by a gentleman celebrated for his judgment in such matters,[7] and still more so by such energy and abilities, that success is, with him, almost as certain as enterprize. Such a rich commodity as sugar, when raised in

6. A descendant of the Germans who colonized the South Carolina interior region called Saxe Gotha, Abraham Geiger commenced vine culture at his plantation, Mount Gill, in Lexington Country in 1819. In 1831 he reported, "I have thirty-two acres in vines, containing between thirty and forty thousand plants." "On the Establishment of Vineyards in Southern States," *Southern Agriculturist* 3, no. 3 (March 1831), 129. After failures with plantings of French vines, he concentrated on the culture of Herbemont, Bland's Madeira, and Scuppernong. He doubted viticulture would succeed commercially until black rot came under better control.

7. James Guignard.

abundance, in our State, must very much increase its wealth, and, by diverting some part of our land from the culture of cotton, together with the great exertions of one of our honorable members of Congress, to bring the latter article in general use for the sails of our navy, the quantity of cotton raised must be lessened, and its use increased, which must give us hopes of its rise in price.

This must necessarily increase the capital of the State, and undoubtedly promote the rich planters, by giving them a more valuable commodity for market. Will it, however, encourage that kind of population which it is our dearest interest to increase? I fear not. Let us hope, nevertheless, that, if it will not do this directly, it will do it indirectly, and that the increased wealth of the State will diffuse itself throughout, and enable us to turn our views steadily of our poorer lands with hardy and industrious farmers and cultivators of the vine, the silk, and of such other articles which our highly favored soil and climate are capable of affording. This, and only this, can render us permanently prosperous, and perhaps on this alone may depend our very existence as a free, independent and happy people.

With the certainty that you, gentlemen, who are the united representatives of the agricultural interest of your country, will unite all your efforts for its best prosperity in whatever way it may be best promoted, I must again repeat my entreaties for your indulgence and forgiveness, for what may appear to you rather too presumptuous in this paper, and beg you will accept the assurance of my most sincere respect.

N. Herbemont

Pruning Frost-Nipped Vines.

March 22, 1830

Herbemont was not above dissembling to increase the reading interest of his letters. In this elaboration of his April 20, 1828, epistle on pruning, he begins in the apologetic mode, confessing fallibilities and inaccuracies, while confirming and strengthening the point of his earlier letter—that pruning vines in spring when they are prone to sap bleeding has no injurious effect on them. In a sly coda, the end of the letter reveals the height of his authority on agricultural matters in the eyes of the reading public when he disavows the title "Dr." given him by a correspondent in North Carolina. Published in *American Farmer* 12, no. 3 (April 2, 1830).

On the Vine.

Columbia, S. C. March 22, 1830

J. K. SKINNER, ESQ.

Dear Sir,—When I have written occasional weak essays on the culture of the vine, and sometimes on other subjects connected with agriculture, it was done certainly with a view of scattering thinly the career of my life with some specks of usefulness. I must, therefore, most sincerely regret that I may have been unwittingly the teacher of some errors. Your correspondent "M." in the *American Farmer* of the 12th inst. No. 52, Vol. 11, has had the goodness to make some excuse for me for having said that the repruning of grape vines after they had been nipped by the frost was attended with no injury to them, although they bled much in consequence of it. The practice being recommended in some French books induced me to try the experiment, and although I have used it every spring for six or seven years past, without stint of the pruning knife, I am bound to declare that it has not in one single instance been followed by any serious injury or diminution of the crop that I could judge of. The bleeding is certainly alarming in its appearance, and it has sometimes injured the first bud below the cut; but as at this season vegetation is very rapid, and that *the vine does not bleed when it is in full foliage*, the bleeding

soon stopped of itself and in a short time the vines looked as if no such late pruning had been effected. Notwithstanding this, and even if I had not read of some undoubted cases of injury done by it, I would still recommend any operation by which the bleeding might be prevented. That which seems to promise the most effectual remedy is that proposed by Mr. Andrew Parmentier,[1] viz: the application of pulverized plaister of paris to the wound immediately after it has been made. I presume it is the plaister as it is prepared for cement by calcinations, by which its absorbent quality is probably much increased, together with the property it has of hardening very soon, or of setting, as it is I believe, technically termed. The instances of the vine being greatly injured, as given by your correspondent "M." come in such a shape as precludes any doubt on the subject.[2] I have also tried rubbing off the frostbitten shoots; but was not pleased with the effects. In the first place, the bleeding was not fully prevented; but only considerably lessened, 2dly, the efforts of nature in this case is to repair the evil as much as possible, and it frequently induces weakly buds to be produced and expanded in the place of those broken off, to the great detriment of the buds below, which, without this, would become as stout and bear as fully as the upper ones would have done, if the frost had not injured them. Shoots that are injured by frost in the slightest degree never recover fully so as to become of suitable size and appearance, neither do they ever produce fine fruit. For these reasons, I invariably lop them off, and the lower buds readily supply their place. It is proper here to notice that, always anticipating injury by late frosts, I leave, in pruning, at least two buds more than I otherwise should. Should no frost happen to do the mischief I am prepared for, which has never yet occurred to me, I would rub off the supernumerary shoots, beginning at the lowest ones; for the upper ones are always the best. By following the above stated practice, I have never failed in obtaining a good crop, so far as the injury by the frost was concerned. To this there was, however, one exception, though it is a somewhat different case. This was in 1828. The winter had been uncommonly warm, vegetation was unusually forward, the vines had shoots three to six feet long, and the plants were very full of sap, when in the beginning of April, I believe about the eighth, a most severe frost happened which killed, not only the young growth; but also, generally the growth of the preceding year, and in many instances of young vines, killed the wood of three or four years growth down to the ground.

1. The first important landscape gardener of the United States, André Parmentier, emigrated from Holland to the United States in 1824. He established a botanical garden in Brooklyn that established him as a force in practical horticulture. His advice appeared in *American Farmer* 11, no. 50 (February 1830).

2. "I re-pruned some of my vines, and the sap flowed profusely, on which I discontinued the pruning, and rubbed off the dead shoots. The vines re-pruned died down to the old wood, generally, and yielded very little fruit; and those that had the dead shoots rubbed off yielded about a fourth of a crop of grapes." "Pruning Grape Vines," *American Farmer* 11, no. 52 (March 12, 1830), 411.

This was a most extraordinary case, and therefore, my second pruning could be of no avail, and the vines bore little or no fruit.

I am much obliged to your correspondent "M." for his kindness in excusing me; but after having given the above reasons for my recommendation of a practice that has been in some cases found injurious, it will be admitted that I had not offered it on slight grounds. Without, therefore, retracting my opinion, I beg to be distinctly understood that I do not recommend to any one to follow blindly any practice; but to try it again partially and ascertain whether some kinds of vine resist the operation of the second pruning better than others, and whether strong vines in general do not suffer by it, while weak ones are injured, if so they are.

Mr. Thomas Gimbrede,[3] in the same paper, has given us short views on this subject, and he is undoubtedly correct as far as he goes. It is perfectly true that vines may be pruned with safety, in the autumn, after the fall of the leaves; but it is equally true, I believe, that, in consequence of that slow but constant vegetation which is carried on (during the winter) with all its force to perfect the buds and wood which are left on the vine, the few buds thus left are thereby pushed more forward than they otherwise would be, will expand earlier in the spring and, therefore, be more exposed to injury by late frosts than if the pruning had been performed early in the spring; but while the weather is yet cold enough to obviate the bleeding of the vines, or at least to render it harmless. To understand this the better we must remember that, whether a vine is pruned or not, the upper buds are always the first acted upon by the sap, and that they are generally fully swelled and often expanded before the lower ones have begun to swell, many of which would not grow at all if the vine was left to itself. The principal object of pruning seems to be, to bring the fruit-bearing parts of a vine as near as possible to the old wood, and keep it within proper limits, thereby rendering the shoots stouter and more vigorous, and the fruit larger and richer than it could otherwise be. By early, or fall pruning the vine puts out earlier and is more exposed to late frosts, and by late pruning the buds are swelled and developed later and have therefore a better chance of escaping. Joined to this that a slight bleeding must have also a tendency to retard the growth. My own practice is to prune early; but it is for a different reason and with different views. It is this, that by doing so, I have more time to do my other work, such as making or repairing the frames my vines run on, planting, grafting, &c., &c. I have hitherto been the more inclined to follow this method of proceeding, that I had little fear of injury by the bleeding of the vines from the repruning. It is nevertheless most desirable to avoid, if possible, even the appearance of injury.

3. Dr. Thomas Gimbrede was professor of drawing at the U.S. Military Academy at West Point and a viticulturist of note, maintaining a vineyard at West Point.

I have, sir, been thus prolix in giving my reasons for my practice, first to show, that if I have induced others into error, it was done very innocently; and also, to throw as much light as my poor experience is capable of, on a subject that is becoming more and more important. Your readers, as well as yourself, will therefore, I hope, excuse me.

As I am writing to you, I may as well take notice of a mistake, a very unimportant one it is true, that is made in another article of the same paper, where I am honored with the title of Dr.[4] As this is a title to which I have not the smallest claim, I take this opportunity of divesting myself of the borrowed feather with which I was erroneously adorned.

I am very respectfully, Sir,

Your obedient servant,

N. HERBEMONT

4. In a notice by the Agricultural Board of North Carolina of Herbemont's donation of eleven varieties of vine cuttings, the board secretary styled him "Dr. N. Herbemont" (411).

On the Culture of the Grape Vine, with Observations on the Practice Recommended by Various Writers:

March 30, 1830

The author who provoked Herbemont's "Observations," George J. F. Clarke, was one of the larger-than-life creatures who peopled the early South. Born in St. Augustine in 1774 when Florida was an English colony, he prospered after its reversion to Spanish rule, eventually rising to the post of surveyor general of east Florida, a post whose powers he amplified well beyond the bounds of custom and law. Old Spanish grants would shift their bounds with a rub of his eraser. When queried by persons about record books, he cavalierly indicated he didn't keep them. He purchased his slave mistress, Flora, manumitted and married her, freed her daughter and had seven further children with her.[1] After the assumption of control in Florida by the United States, Clarke amused himself with gentlemanly agricultural experiments when not appearing in courts to testify about land frauds. A literary stylist of the first order, Clarke could elicit pathos in meditations such as "On the Rot or Mildew of Grapes," *Southern Agriculturist* 3, no. 10 (October 1830), 528–33. Clarke's greatest contribution to viticulture was his three-part essay, "An Attempt to Simplify the Culture of the Grape," published in the *Southern Agriculturist* 2, no. 12 (December 1829); 3, no. 1 (January 1830); and 3, no. 2 (February 1830). Published in *Southern Agriculturist* 3, no. 6 (June 1830), 304–6.

"Columbia, (So. Ca.) March 30th, 1830

Dear Sir,—I have been much pleased to see that in several numbers of your most valuable periodical, on agriculture, Mr. Geo. J. F. Clarke, "attempts to simplify the agricultural process of the grape;" and when we see gentlemen of such intelligence elucidate and simplify the various process of a culture which has hitherto

1. Daniel L. Schafer, "'A class of persons neither freemen nor slaves': From Spanish to American Race Relations in Florida, 1821–1861," *Journal of Social History* (Spring 1993), 42. Louis Biles Hill, "George J. F. Clarke, 1774–1836," *Florida History Quarterly* 21 (January 1943), 199–211.

been very complicated, and undoubtedly mingled with practices which took their origin in ignorance and superstition, we may hail the auspicious beginning of an era favourable to the subject taken in hand. Notwithstanding the numerous European works on the cultivation of the grape, and some of those, by persons of the very highest merit in science and experience, if it be presumptuous, it may not be predicted with the less probability in the result, that the best treatises on this most interesting subject, may hereafter be the growth of our own free country, unshackled as it is by the habits and prejudices of past ages. We must, however, admit our present great inferiority, and ever acknowledge that we are undoubtedly indebted to them for the great leading principles of the art, but untrammeled as we are with the rubbish of the ancients, if we have wisdom enough to retain nothing from them but what is really reasonable and according to nature, may we not raise thereon a superstructure comparatively free from the useless and even injurious additions, more calculated to disfigure and render it less fit for its purpose, than if left to conform with nature in all her simplicity, beauty and usefulness. Are we not, therefore, to congratulate ourselves, when we see that the good work of reformation has been commenced, and hail the prospect of success, when reason, and nature, joined to science, have begun to examine the subject, and to discard all futile appendages. Let Mr. Clarke, therefore continue, and be not displeased if, in any thing I may say, I seem to oppose any of his positions; for my aim is only to elicit truth by discussion, but more particularly to have it proved by varied and multiplied experiments. We must also invite most earnestly to our aid as much helps as possible from those who have made the natural sciences their study, and also those who can conveniently add the practice to the theory, and publish their results. A little attention to this subject, will show it to be most worthy of all the trouble and expense that may be bestowed upon it. As to the making of the wine, after we have obtained the fruit in its most perfect degree of maturity, European writers must be our best guides; because more chemical knowledge has been bestowed on this branch of the art than on the culture of the vine; for it is seldom that we see men of sound and scientific acquirements subject themselves to the hardships of manual labours in the field, by which only, or by very close and attentive superintendance, true practical knowledge can be obtained.

It is to be feared that the public feeling is not yet sufficiently alive to the vast and manifold benefits to be derived from the extended culture of the vine in the Southern States; but we cannot too soon open our eyes to our many millions of acres of vacant, useless land, capable of maintaining, in comfort a population more dense than the most thickly settled parts of our richest soils. This culture has the vast advantage over any other now practiced in this country, that it is equally susceptible of being formed into large establishments by those who may be able and willing to form them, and of yielding to the proprietors more than any thing else

which has as yet been tried here, and, (which may be of incalculable benefit to the country,) of being divided into numberless small establishments, each of which is capable of supporting a family, if not in affluence, at least in comforts, yielding in the aggregate, an immense revenue to the country by the great commerce it must give rise to; but the greatest advantage may be still in having a very great increase of population of honest, hardy and independent people, where we have now only a desert. I have heard a fear expressed that such people may leave the country in search of richer lands in the West; but there is little danger of this; for the cultivation of the vine offers so many attractions in itself, that men are seldom known to abandon it; and surely they will scarcely abandon a vineyard yielding them a comfortable subsistence in a most healthful country, affording besides many other advantages.

As far as my experience goes, it fully confirms Mr. Clarke's first part, (Vol. II. Pp. 510–512,) except the transplanting of "vines when loaded with foliage, without losing their tender sprouts that are not bruised," &c. for I have not tried this. Too much attention cannot be given to the reading of his second number, (Vol. III. Pp. 17–19.) It is possible, however, that Mr. Clarke may go somewhat too far in proscribing manuring altogether, even in the poorest land.[2] The generality of writers positively declare that the best and most delicate wines are produced without the assistance of manures, and they exclude most particularly stable manure. This I believe to be most true; nevertheless, I think it commendable to enrich the soil, at the time of planting, cuttings particularly, with compost formed of good vegetable earth, the scrapings of the cow-pen, ashes, rubbish containing lime, &c. The object in this is evidently to give the plants a vigorous growth, and induce it by any means, to send its roots deeply in the well loosened soil, after which they will be sufficiently within the reach of abundant moisture, and thereby resist with ease our long droughts and great heats. This, at least, has of late years been my practice, and I have had no cause to complain of it. I cannot pass over this part seeming to recommend the practice of Catalonia and other parts of Spain, of using merely a 'crowbar' or an 'auger' to make the holes in which the vine is planted, unless the ground has been previously trenched to the depth of at least two feet, and the soil is naturally very light and sandy, and not at all disposed to become hard by pressure. By making a hole with a crowbar, the hole becomes coated with a hard crust which the very tender roots that are first produced by a cutting, must find some difficulty to penetrate. I much prefer in every case to take out the earth with a spade, place in the cutting, and return the earth with a general and gentle pressure upon it with the foot to bring it in contact with the plant. In very stony ground, however, the crowbar may be the only practicable way, and this may be the more admissible that

2. Clarke objected, "It attracts, protects, and favours the propagation of insects and reptiles that prey on, and otherwise injure the plant" (17).

the soil between and below the stones, is usually sufficiently soft and friable to receive the young roots; yet, I certainly would prefer, wherever it is possible, to make deep holes to plant the vine in, whether rooted plants or cuttings. It appears to me that the analogy between the two countries is not perfect, far from it; for in Europe the soil has been in cultivation for centuries, whereby it has been stirred up and mixed very often, which may give it a sufficient preparation to receive the plants. Here, our soil is such as it comes out of the hand of nature, which may be the best for natural operations in our forests, where the ground is shaded and covered by the decaying leaves and other detritus, by which it is kept cool and moist, so that the native vines and other plants are not exposed to the drying winds and sun, and have, therefore, a plenty of time to send their roots deeply into the earth. We ought, therefore, to prepare our soil for planting, so as to enable the plants equally to resist the exhausting influence of the wind and the sun.

As to the manner of planting recommended by Mr. Clark, at the distance of about six feet, with the view of removing a part of the vines when the extent of their growth may require it, I consider this a good practice; but I think fully double that distance, for vigorously growing vines, is better; for, although the superfluous ones may be taken up and planted elsewhere, this is attended with great labour, which I can testify, having been engaged at it a great part of this winter and spring. My vines had been originally planted much too close, not with the view of taking them up (as I have done); but through ignorance of the necessity of planting in this country, much farther apart than in Europe, especially as the kinds found as yet to succeed best here, are such great growers, that it is impossible to confine them to small spaces. If they are planted, therefore, twelve feet apart, the intermediate spaces may be cultivated while the vines are young in something else, such as pease, small grains, &c. taking care not to plant these articles too near the vines. A better way still, which my experience, particularly of the last summer, has suggested to me, would probably be of planting two or three rows at a good distance, then to leave a space unplanted at least equal to that which is planted, then plant two or three rows followed by a similar vacant space as above, and continue to till the ground as thus planted in strips of two or three rows of vines. The vacant strips between the vines may be cultivated in any thing of low growth, so as not to interfere with the free circulation of the air among the vines. The last summer being very wet, the grapes rotted much wherever the air had not a very free circulation, so that the ground could dry in a short time; but a few vines which were planted in two rows only, and at the distance of about 80 or 100 feet from other vines, were almost entirely free from rot; so much so, that two of these vines produced 30 gallons of wine, which was at the rate of near 1200 gallons per acre. This was in my garden, and the quantity of rotten grapes could be accurately judged of by the density of the obstructions to a free circulation of air. This is a most important fact which tends to give an almost full certainty of great crops under almost

any circumstance; for beside obviating the rot in the grapes, there is no doubt that vines being trained high, about seven or eight feet, are scarcely at all liable to be injured by late spring frosts—getting rid, by the same means, of the two most dangerous enemies of the vine. Old vines put out later in the spring than young ones, so much so, that the vines above alluded to, have not been at all affected by the frost nor the rot for seven or eight years, excepting by that unparalleled frost in April 1828. These vines are trained horizontally over head, on coarse trellis works, seven or eight feet above the ground, supported by rough lathes singly split out of dead pine trees.

This high training may be objected to, particularly, for many of the imported vines which are not of a sufficient growth for this purpose. I am not prepared to assert that those vines of weaker growth will not succeed well according to the European mode of planting and training; giving them, however, more distance and more height than in that country, I believe some of them will prove most valuable acquisitions. Neither am I prepared to accede to the opinion expressed by many, that we shall have to depend solely on our native vines for making wine. Many of our native vines will undoubtedly be found to answer this purpose very well; but it remains yet to be proven that they must be exclusively cultivated to secure success. Among the numberless kinds that have been and will yet be imported from abroad, time will undoubtedly show several, at least, as valuable as any of the native ones, as it has already been the case with a few. When only a few persons are engaged in making experiments on such an extensive subject, many years will be required to ascertain fully the properties of only a few kinds, whether native or imported. It is to be hoped, that so interesting and important a matter will attract public attention, and that the very heavy burden of making labourious and costly experiments, that must redound to incalculable public benefit, will no longer be suffered to be borne by a very few unassisted individuals.

There is, perhaps, nothing so generally asserted by almost all writers on the subject of the cultivation of the vine, for the purpose of making wine, than this; that to make a good rich wine, the grapes must be produced near the ground, or as some express it, near the roots. I do not recollect now a single exception. It requires, therefore, a great deal of hardihood, even to suspect that this may not be true. Yet, I unhesitatingly say, that I do not believe it to be true, except, perhaps, in cold climates, where the reflection of the heat of the earth may be necessary to give the fruit a sufficient degree of maturity and saccharine matter to make good wine. The universality of this prejudice, if it be a prejudice, may be owing to this, that almost all the works that have been written on this subject, were written in such latitudes as may have made it necessary to have the grapes as near the ground as convenient. Be this as it may, the fairest and largest, and, I may say, perhaps, ripest grapes are most usually found the farthest from the roots; and so far as my short

experience goes, I have not observed a greater deficiency of saccharine matter in grapes grown at a great distance from the earth, than in those that grew near it, while the former were much more free from defects or from rot. I confess that I do not fully understand the reasoning of most of these writers, as to the elaboration and connexion of the sap preparatory to its being converted into grapes, containing much sugar, &c. I suspect that neither they nor we cannot, as yet, see very clear into these matters; but, if there be any thing like truth in their speculations, it makes rather more against their hypothesis than its favour; for the elaboration of the sap must be much more perfected by going through a long line of vessels to the end of a long vine, than merely passing through a few inches of it. Neither do I, therefore, deny the propriety, or even the necessity of short winter pruning. This does bring the vine, in some degree within the intention of these authors; for although the fruit bearing part of the vine is thereby brought near the root, it is brought near the old wood. The objects I have in short pruning are many, the principal of which are, that, without it, the vine would be much too thickly set with foliage, too many branches and too much fruit of a small size, and divided into too many small clusters, instead of smaller numbers of larger clusters of larger berries, and that the latter would in a great degree produce on wood that had not acquired a sufficient degree of maturity to bring it to perfection, and, also, that without this short pruning, the vine would be extended to inconvenient lengths chiefly composed of slender, weakly and puny branches, unable probably to resist the great changes of temperature. To this cause, (the want of pruning) I attribute the general appearance of the wild vines in our forests, where a great deal of dead wood is always found; and this may be the mode of pruning that nature adopts.

This brings me to notice Mr. Clarke's proposal of leaving at once, to a young vine, the height intended for it. (See Vol. III. Pp. 85–86.) Now, Mr. Clarke, you are a much bolder man than I am, and while (in the cultivation of the vine, according to the European methods) I am a sceptic, you are a right down infidel, and were you in Europe, you would undoubtedly be, as least, excommunicated. My fear, as I have said before, is, lest the wood might be deficient in maturity and size. Otherwise, it would be a great deal of time saved that is now lost, even by my deviations from the learned practices of the Eastern world. You may be right, however, and I shall try it fully.

It is most desirable that this gentleman, and as many others as can be enlisted under the banners of so good a cause, should continue not merely reasoning, but experimenting on this subject, and enrich the world with, not only their lucubrations, but chiefly with the full results of their experiments.

It is also most desirable that some persons should turn their serious attention to the providing, not a substitute for corks; for I believe there is no such a thing; but of cork trees themselves. These may be obtained in abundance in the South of

Europe, and it is well worth the cares of some of the Agricultural Societies, or no doubt, of the government itself, to procure them and have them largely disseminated throughout the country for the benefit of future generations.

If, Mr. Editor, you think these desultory observations are worthy of the public eye, you will oblige me to publish them. I am very respectfully, Sir,

Your obedient servant.

N. HERBEMONT.

Letter to an Alabama Planter

Of Making Wine.

July 9, 1830

By 1830 Nicholas Herbemont's reputation as a vintner advanced because of three causes: the clarity with which he argued a scheme of vineyard management suited to American conditions, the generosity with which he supplied interested persons with grape varieties proven to flourish in the difficult growing conditions found in the United States, and his skill as a winemaker. In the later years of his life, the last reason predominated. As bottles of his vintage circulated and published reports lauded their quality, Herbemont became the American authority on making flavorful wine. The "gentleman in Alabama" whose request prompted this letter typified the sort of correspondent of the 1830s curious about the hallmarks of Herbemont's wine-making method. The "gentleman" was probably physician and cotton planter Robert W. Withers (1798–1854) of Erie, Greene County, Alabama, president of Alabama's Agricultural Society. In 1828–29 he traveled through sixteen states visiting grape-growing establishments and, in a letter to the *American Farmer* dated May 14, 1829, mentioned Herbemont's vineyard.[1] Herbemont's remarks continued the line of reasoning concerning the regularization of alcoholic potency by judicious sugaring of the must, the avoidance of brandy as a fortification, and the goal of creating finesse in taste. Of particular note was his instruction to cull the grapes before the crush, excluding all spoiled or immature fruit. No aspect of Herbemont's wine making had a more beneficial contribution to the quality of his vintages. Published in *American Farmer* 12, no. 19 (July 28, 1830): 147–48.

1. Robert W. Withers, "Grape Vine and Sugar Cane," *American Farmer* (June 5, 1829), 91–92.

Culture of the Grape.

Columbia, S.C. July 9th, 1830

J. S. SKINNER, Esq.

Dear Sir,—The following is the answer to a letter I received from a gentleman in Alabama, requesting information as to my manner of making wine, &c. Thinking it possible that some of the readers of your invaluable "American Farmer" may, perchance, be glad to read it, I send it to you for insertion, if you think it can do any good. It really does me pleasure to answer all such queries; but, I confess, it takes too much of my time.

I am yours, very respectfully,

N. HERBEMONT.

Copy of an Answer to a letter from a Gentleman in Alabama.

Columbia, S.C. July 9th, 1830

Sir,—It is always with pleasure that I answer any queries relative to the culture of the grape and the making of wine. I do, then, readily answer your letter of the 20th ult., according to my limited experience, and to the best of my knowledge. You request, in the first place, to know the process as practiced by myself, in making wine with the assistance of sugar. In complying with this request, allow me to begin the subject by explaining what wine is. This is the less impertinent, that liquors are often made and sold in this and other countries as wine, which have very little claim to this name, unless we give it also to beer, cider, and any compound frequently found as substitutes. Wine is the juice of the grape fermented according to certain rules, and to be sound and wholesome, it ought not to have any admixture of other substances, particularly of distilled spirits. The juice of the grape not fermented is not properly wine, and this fermentation is unavoidably necessary to the process of *vinification*. My objection to the admixture of brandy is twofold. 1st. Instead of assisting the process of fermentation, it is an obstacle to it, and 2dly, it renders wine heady, and by affecting the nerves, is most probably the cause of many of the diseases to which those who make too free a use of spirits are most liable. Yet wine contains spirits; for these are certainly the produce of fermentation; but the spirits thus produced seem, until they have been separated by distillation, to have very different effects on the human body. In fact, it has been observed that the inhabitants of those countries where wine is almost exclusively and generally used, are much less subject to many of the diseases to which those who usually drink spirits are frequently victims, such as liver complaints,

dyspepsia, &c. &c.[2] In order, however, to make a sound, durable and wholesome wine, the grapes must have attained the highest degree of maturity possible; for, without this perfection of maturity, they contain but little saccharine matter, and this is essentially necessary. The produce of young vines is usually deficient in this, and to remedy the defect, it seems to me that the addition of sugar is allowable. Two other reasons have also induced me to add sugar to the grapes, without which a strong wine cannot be made, and unfortunately, our taste in this country has been vitiated by using chiefly, particularly formerly, wines strengthened by considerable quantities of brandy. This practice of the wine manufacturers for the American market, has probably been induced by the fear of the merchant, lest his wines should not be able to traverse the ocean without it, and be kept sound. Thus a very injurious taste was acquired, to satisfy which, the admixture of brandy was continued. The second reason is that light and weak wines cannot be made and kept without good and deep cellars, in which little or no change of temperature is experienced; and I know, as yet, no such cellars in this country; and although they can easily be made, the expense is considerable; to which must be added all those numerous experiments necessarily unavoidable in new undertakings.

I have then added sugar to my grapes in proportion to the strength desired in the wine. The grapes, then, being as fully ripe as possible, my aim is to have them gathered in as short a time as possible, that the first gathered may not begin to ferment, while the others that are to be made into wine with them, are still in the vineyard. A number of hands proportioned to the quantity to be gathered in the course of one day, or two days at most, are to be procured. Each being provided with a pair of scissors and a "basket," proceed to gather the grapes, taking care to cut off all the rotten or the green berries that may be among the ripe and sound ones. As soon as gathered, they are to be mashed and bruised, so that not one berry, if possible, remains uncrushed, taking care, however, that the seeds be not broken, as this would give a harsh and bitter taste to the wine which nothing but age could cure, and that very imperfectly. As soon as the grapes are mashed, and before the fermentation has commenced, I try the juice with Beaume's "Areometer" or "Pese sirop," to ascertain the quantity of saccharine matter it contains; which, let us suppose, is 8 or 10 degrees. I then add enough of the best, dry, brown sugar, so as to raise the instrument, when immersed in the juice thus sugared, to 13 or 14 degrees, which, I think is fully sufficient to make a strong and durable wine. Those who have not this instrument may use a hen's egg which will rise in the must of juice, so as to have one end just out when a sufficient quantity of sugar has been

2. See, for instance, the letter of Dr. Samuel Brown of New Orleans to Dr. Benjamin Smith Barton, *Philadelphia Medical and Physical Journal* 1, no. 3 (1808), 118: "The almost universal use of claret, and the influence of a fine sky, produce habitual good spirits. Dyspepsia is so uncommon, that in twelve months I have not been consulted on a single case of it."

added. The quantity I usually find necessary to add is from half a pound to one pound per gallon of juice, supposed to be contained in the vessel. This being done, and the whole in a vat not more than two-thirds full, I cover it with boards or cloth, and let it ferment in this state a shorter or longer time as the temperature of air is more or less high. Thus when the thermometer is from 80 degrees to 90 degrees or thereabouts, 24 hours I think fully sufficient; when 60 degrees to 75 degrees, 2, 3, or 4 days. At all events I never wait until the crust formed by the skins and woody part of the bunches, and which rises to near the top of the vat, falls of its own accord. During this process of fermentation, I have the above named crust, called the "chapeau" or "cap," broken and the whole contents of the vat well stirred and mixed about twice a day. After this, by opening the spigot at the bottom of the vat, I let out the juice as long as it will run. When there is no spigot or cock at the bottom of the vat, the purpose is answered by sinking a basket in the middle of it, and dipping the clear juice or must with a suitable vessel. Before it is put into the casks ready to receive it, it is proper to let the must pass through a wire sieve to retain any seeds or skins that might be in it. The casks are then filled to about 3 or 4 inches of the bunghole—but I am going too fast. The must that is thus left in the vat is then carried to the press, and the juice thus obtained, may either be mixed with the rest, or kept separately. When only a small quantity of wine is made, it is not worth while to keep them separate, although the must obtained from the press is somewhat inferior, being more harsh than that taken from the vat. The juice or must, being in casks not full by 3, 4, or 5 inches according to their size, I take 3 or 4 grape leaves to cover the bunghole, and keep them down by a double handful of moistened sand. As the fermentation goes on, these leaves and sand act as a valve which rises and falls as it is more or less violent. This continues for 2 or 3 weeks, during which time the casks receive occasionally an addition of must, kept in smaller vessels for the purpose, filling them more and more as the fermentation subsides. When, by applying my ear to the cask, I no longer hear the bubbling or frying noise of fermentation, I take away the leaves and sand, fill the casks to about one inch, and put a bung in the hole, without driving it very tight, and for greater security, it is necessary to bore a gimblet hole near the bung. This is stopped with a peg that can be taken out occasionally to let out the gas that has accumulated. Without this precaution, the cask, unless it were very strong, might burst. It is finally bunged tight, and 2 or 3 months afterwards, taking advantage of a clear frosty day; the wine, as it is now called is racked off the first lees, and put into other and very clean casks duly prepared by being fumigated with a sulphur match. Wine made in this manner will keep any number of years perfectly around and improving. The best I ever made is the produce of a grape called here "Madeira."[3] It is a very great bearer and a most juicy grape; but it has the disadvantage of being, in

3. Herbemont's Madeira.

some situations, subject to rot, some years much, at other times scarcely at all, and sometimes not at all. When this last is the case, very great crops are made, and it is a very superior wine. It has hitherto commanded $2 per gallon, when only 4 or 5 months old. It resembles Madeira, particularly that called the "juice of the grape," more than any other wine. It is very wholesome, agreeing well with both stomach and head, which last is never made to ache by it. This quality, I chiefly attribute to its having no brandy in it. As for the notion that some persons entertain, that wine cannot be made without brandy, it is perfectly absurd. Distillation is comparatively a new invention, and I should like to know where our great ancestor Noah purchased brandy to make his wine with!—cuttings and rooted plants of this Madeira vine, as also of many other kinds may be had here in considerable quantities at a very moderate price. I have made wine of several other kinds of grapes, some of which are very good; but none equal to my Madeira. I never had the "Schuylkill Muscadel"[4] till this spring, when I received cuttings from several quarters, and particularly from a correspondent at Cincinnati, Ohio,[5] who also enclosed a bottle of the wine made of it, as he thought, in a very imperfect manner. The wine is pretty good. "It was sound," and gave indications that, with proper care, it might make a good wine. It was without sugar or brandy, and yet was pretty strong, and I did not observe that "unpleasant acerbity" about it which you mention. If the grapes are not fully ripe, no sugar that you can add, so that it undergoes the fermentation, will ever deprive the wine of the acidity produced by the greenness of the fruit. It will only make it strong enough to prevent its passing to the acetous fermentation, and easily turn to vinegar. Of the Scuppernong wine, I have seen very little that was good; yet from the great sweetness of the fruit, I should think that, if it were properly made, it would make a good wine: but those that make it, seem to prefer making it without the trouble of attending to the fermentation, and make a sort of beverage, palatable enough, except the flavour of peach or apple brandy. The grape does not do very well with me, though it grows luxuriantly enough; but it does not bear a great deal, and the berries, when ripe, drop from the vine, so that it would take, several weeks to gather the crop of one vine.[6] I never have tried to make wine of it; but I wish I could hear of some one's doing it, *secundum artem*. You express a doubt of the French method of pruning and of making wine being suitable to our soils and climates. Each kind of grape, each particular soil and climate require probably some deviation from some particular standard; but, I believe the general principles of the French on this subject are undoubtedly good, principally with respect to the making of wine for this subject has attracted the notice and labours of very scientific men in that country. Every province, and

4. Alexander grape.

5. Nicholas Longworth.

6. *Rotundifolia* grapes grow as separate berries that ripen at various times rather than in bunches that ripen simultaneously.

even small sections of them, have practices of their own, many of which are, no doubt, founded on prejudice; but it is fair to presume that others are grounded on experience, and one fact is worth all the hypotheses on this subject.

It is certain, as you suggest, that short pruning occasions in some kinds of vine their putting put many and strong side shoots or "interleaves." Experience alone can correct all these defects.

If you adopt my method of making wine, I beg you will inform me of your success. In the mean time, I am respectfully, sir, your obedient servant,

N. HERBEMONT.

N.B. The drought is so severe here that many of the corn crops are totally destroyed, and I have this day directed my overseer to cut down one field, (the half of my crop) of about 15 acres of corn, and plant cow-peas in its place.[7] I fear this destruction is very extensive.

7. Herbemont's cornfields at Palmyra would occupy his attention with increasing frequency over the 1830s. Because they were easier to manage than his vineyards, he found that he could keep them productive in periods when he suffered from physical ailments (1835–36) that prevented his close attention to the vines.

On the Formation of Vine-Yards of Native Vines, and the Ingrafting of Grape-Vines;

September 4, 1830

In 1830 the idea that French grape varieties might thrive in America if grafted to native rootstocks spread through the agricultural community like wildfire. Herbemont had practiced grafting since 1819 at Palmyra and detailed his method to members of the Maryland Society for Promoting the Culture of the Vine in his letter of August 1829. Pomologist William Coxe of Burlington had published on the subject in 1828. Then the *New England Farmer* jumped on the idea, publishing letters by W. R. Armistead and John Lowell on the subject in their volume 7. General Armistead, like Herbemont, had begun his experiments in 1819, and found that a Portuguese grape variety thrived when grafted on a native rootstock. Lowell, whose notions of grafting were shaped by his experience with fruit trees, recommended stem grafting as well as root grafting vines. The question arose, Which was the more effective manner of grafting vines? John D. Legaré, editor of the *Southern Agriculturist*, after printing a review of the Armistead and Lowell letters in the January 1830 issue, requested Herbemont's clarifications on these matters. Herbemont waited until finishing the difficult 1830 vintage before replying. His complaint about the siting of his vines in the sand hills at the end of this letter did not lead him to root up the vines and relocate. Instead, he left the vines intact and began planting another vineyard, expanding his total acreage in cultivation to sixteen. Published in *Southern Agriculturist* 3, no. 12 (December 1830), 632–38.

"Columbia, Sept. 4th, 1830"

Dear Sir,—When I received your letter of the 21st ult. I was in the bustle of my vintage, which bustle is not much diminished by the smallness of the crops, for it takes the same trouble, and sometimes more, to make a small quantity of wine as it takes for a large: ergo, I wish always for a very abundant crop, and if this reason does not appear sufficient for you, I can furnish you with many more, some of which are sufficiently obvious.

You request to be informed as to the divers manners of grafting the vine, and the advantages to be expected from the operation; and also whether it would answer a valuable purpose to have vineyards entirely of native grapes.

The only native grape I have as yet cultivated on a scale large enough to make wine of, is our small summer grape, which I call "Arena,"[1] on account of its growing abundantly in our sand hills. The wine it produces is very good, particularly when it is two, three, or more years old. When new it has a harsh, rank taste, which renders it unpalatable, and which a person without experience would suppose age could never correct. Although this grape is not liable to rot much, it has the disadvantage of being very difficult of cultivation, for it takes but seldom well from cuttings, and this mode of propagating the vine is the only one used in extensive cultures. Another of its disadvantages is, that it yields very little juice comparatively with almost all the cultivated grapes,[2] and particularly with my "Madeira," which is certainly the most juicy grape I ever had any thing to do with. To obviate as much as possible the first difficulty, plants of it may be removed from the woods to the vine-yard, taking care to select the young and vigorous ones. They may also be propagated by layers, for which purpose shoots growing from the ground, or the lower part of the stem, ought to be suffered to remain and be encouraged. At the time of pruning, fall or winter, these shoots ought to be laid in the ground, five or six inches deep; the earth below being well spaded, or made mellow and rich, if it be not so naturally. One or two feet in the ground is enough, and the end that comes out is to be cut down to one or two buds. If the layer is long enough, it may make two or even three plants, by laying it in and out of the ground thus:

I would recommend always to cover with earth, if possible, the part of the layer next to the main stalk; for if it be not covered it will most probably put out a strong shoot close to the main one, and this will be a great detriment to the layers. Layers may also be made in the summer, (in July) of the growth of the season, and they will have taken sufficient roots to be transplanted the following spring; if not, the spring after. In case of removing them the next spring after they have been laid, they ought to be planted as soon as they have been taken up, that the roots, which are very young and tender, may not be injured by drying. In either case, the layers ought to be very carefully separated from the parent vine, and dug up without injuring the roots at all, if possible. It is a good way to have the holes made to receive them before they are taken up. If, however, this is not practicable, as when the

1. *Vitis aestivalis.*
2. In part because the fruits are quite small.

plants are brought from a distance, the roots ought to be covered with earth, moss, or a wet cloth, so that they be not exposed to the sun or the wind. I have moved many vines with these precautions, and they bore fruit the same season nearly as well as if they had not been disturbed. Plants, however, may be taken up in the fall and kept perfectly safe, packed in boxes in earth or live moss; (but not straw or hay,) or put in the ground and remain in either situation until the spring, without their losing their capacity for growing. My reason for using live moss is, that as long as it is alive, no fermentation takes place; but straw or hay, particularly if wetted, ferment and heat, which hurt, and sometimes kill the vines or other plants packed in them. Earth or sand are very good.

There are spots where vines grow must abundantly, and if the situation be not objectionable, a vineyard may readily be made in such a place at a very small expense. Let all the trees be cut down and the bushes be grubbed up, leaving only the vines. Where these have several stems growing from one root, and it is desirable to fill a place in its vicinity, one or more of these stems are to be laid in a trench made about a foot deep at least, the bottom of it being well stirred, and perhaps manured, so as to induce the roots to strike into it, and let the top or tops come out at or near the place where a vine is wanted. It will soon form a vigorous vine, and if there were several branches forming the top, all but one may be taken up when they have taken good roots, the first or second spring, and transplanted elsewhere. The principle layer may then (the second spring) be separated from the parent root with a saw. In this manner, and by taking up and transplanting such vines as may be too close to others, a vineyard is soon made, and it will be in full bearing in the course of two or three years. When the ground is clear of the trees and bushes, the vines must be pruned very close; this will make them put out strong shoots, which being properly pruned the following winter, will bear abundantly, and the fruit will, even then, be found already improved. A coarse frame of durable wood must be put up to support the vines, and the better these are evenly spread and pruned, the more they will bear, and the fruit improve.

In such a place, as is here contemplated, many barren vines will be found, for a great portion of the wild vines are male plants that never bear fruit.[3] These must not be therefore rooted up; but they may be used for stock to graft upon. And so may all the vines on such a spot be used as stocks to graft on, if it is desired to have a vineyard of an entirely different grape from the native one.

In order to graft successfully, several precautions must be taken. First, procure good scions for the grafts in the fall, if they grow in your neighbourhood or South of you. Put them in a box in sand, and deposit this box in the coldest place you can find, or bury them on the North side of a house, hill, or any thing else that

3. Most cultivated vines are hermaphroditic. The native vines of North America and Asia have pronounced sexual morphology, with the bulk of wild vines being male.

may render the situation as late in vegetating as practicable.[4] If cuttings or scions for grafting are procured from the North, and they are not taken from the vines till early in the spring, they will do very well to be used as soon as they have been obtained. It is evidently seen that the object aimed at is to have the vegetation of the scions less forward than the stock to be grafted on. The best time for grafting is when the buds of the stock are just beginning to swell, which is an indication that the sap is in motion. If grafting is done long before this period, it will frequently fail, and but very seldom after the buds are beginning to grow. I have, even rarely, failed in grafts done when the stock grafted upon was in full leaves, and as late as June, provided the buds of the scion have made no progress, or very little in swelling. There are, principally, two manners of grafting the vine that are very successful; in both the graft is inserted below the surface of the ground about two or three inches.[5] The most common, and the best, when the stock is small, (less than one inch in diameter) is what is usually termed "cleft grafting." After having dug away the earth at the foot of the vine to the depth of five inches, saw it off and split it with a strong knife and a hammer—take then a scion with two, or even three good buds, with a sharp knife cut the lower end of it in the form of a wedge—with a wooden wedge, (or an iron instrument made on purpose for cleaving and holding the cleft open) driven into the cleft on one side of it, keep it open and insert the graft so that the bark of the stock and that of scion coincide in the usual manner—take out the wooden wedge, and if the spring of the stock is not strong enough to hold the scion firm, tie it with any thing that will rot after a while, then place any thing over the part of the cleft that is open, so as to prevent the earth from getting into it—fill up the hole with the earth, so that one bud of the graft be out of the ground, drive a few sticks round it to protect it from injury, and leave it to itself. The other mode of grafting, suitable for stocks of any larger size than the preceding is, after having sawed off the stock, as above, to bore one or more holes into it with a gimblet, or a bit of a suitable size, to the depth of an inch and a half, or thereabouts. Prepare then the scion by cutting with a sharp knife the bark all around, and cut it off below so as the make it to fit the hole, leaving a shoulder, thus—

Drive the scion down to the shoulder, and it is done—covering it with earth, leaving but one above the ground. If the stock is only one inch, or not much more in

4. [Author's note] The late Mr. John James Dufour, in his very valuable book called the 'American Vine-Dresser's Guide,' printed at Cincinnati, Ohio, proposes to deposit such a box, with the vine-cuttings in sand, in an ice-house, so as to prevent, or rather retard vegetation, and I believe this experiment would be attended with the best success.

5. Herbemont dismisses the utility of stem grafting grape vines entirely.

diameter, one hole only is made in the middle of it, but if it be larger, make two or more, according to its size, and drive into each of them a graft prepared as above. It appears from the success that has generally attended this mode of grafting, that it is not necessary for the vine, as it is for any other tree which I ever grafted, that the bark of the graft should be even with that of the stock, and in this the vine has a considerable advantage. These grafts will generally grow the first year to an astonishing size, depending, however, on the strength of the stock. It sometimes happens that the stem of a vine does not continue of the same thickness downwards to a sufficient depth, before the roots diverge from it and the stock has not length enough to be either split or bored. In this case, cut off the crown of the roots and into each of them that are large enough, insert a graft, and the following spring you may dig them all up but one that is to remain. I am also indebted for this mode of grafting, by boring, to my old friend's book quoted above.

There are many other kinds of native grapes that are cultivated North of this, some of them extensively, and are stated to produce a good wine. I have many of them on trial, and shall, I hope, make wine of some of them in due time. Two other native kinds I have tried, but am not pleased with the result. There are our fox-grape[6] and our Bullace.[7] My experiments on these ought, perhaps, to have been repeated, but the experiments are so very troublesome and expensive, that I can only bestow my attention on the most promising varieties.

The kinds of grapes that have as yet succeeded best with me for wine, are, first the "Madeira," called at the North "Herbemont's Madeira," the "Bland's," or "Powel's Madeira," also called "Rose-Grape," and the "Lenoir." They are probably all three imported vines.

My crop this year at Palmyra has been again almost a total failure, owing to circumstances which I hope to correct. That in my garden has been much better, for notwithstanding a great deal of rot in the first part of the summer, I made from it about 176 gallons of wine, which I am satisfied will be very good. I presume this is at the rate of much more than 1000 gallons to the acre. Of this quantity, 151 gallons are of my Madeira. If I ever succeed as well at my farm as I do in my garden with this grape, it will be, most undoubtedly the most valuable plant cultivated in the Southern States, or indeed elsewhere; for it is the best and the greatest bearer of all I have ever seen. My failure at Palmyra is to be attributed I think, to the improper selection of the site. I have strong grounds for believing this, and I am now labouring hard, very hard, to remedy the evil by removing it to a better situation.

I am anticipating pleasure and instruction from Mr. Clarke's communication for your "Agriculturist;"[8] much is to be expected from him, and perhaps even the

6. *Vitis labrusca.*

7. *Vitis rotundifolia.*

8. George J. F. Clarke, "On the Rot or Mildew of Grapes," *Southern Agriculturist* 3, no. 10 (October 1830), 528–33.

discovery of the cause of the rot, (which I believe is different from the mildew)[9] and of course the remedy.

I am, dear sir, very respectfully, your obed't serv't,

N. Herbemont

9. Black rot, a fungus that thrives in humid conditions, does differ from mildew. It can be prevented somewhat by trellising, which promotes air circulation, and spraying. Samuel R. Johnson of Massachusetts was the first grape cultivator to use vine spraying as a counter to rot and mildew in 1829. See William Prince, "Sovereign Remedy against Mildew of Grapes," *American Farmer* 11, no. 17 (July 10, 1829), 132.

Table Grapes.

October 26, 1830

Nineteenth-century America was smitten by fruit. Gardeners and pomologists strove to find the most flavorful new varieties and perfect their cultivation. Nicholas Herbemont participated in this quest, cultivating apples, plums, mulberries, and strawberries besides his multitude of grapes. While Herbemont generally dismissed the notion of a hard and fast distinction between wine grapes and table grapes, he recognized that for an increasingly sizeable portion of the agricultural readership—the evangelical temperance crowd—the cultivation of grapes for wine making seemed Satan's business. Only the cultivation of grapes for consumption as fruit was innocent. Herbemont willingly acceded to Gideon B. Smith's request to prepare a discussion of grapes as fruit for the *American Farmer*. Historically, the truth that Herbemont posits early in the letter, that no consequential difference between grape or table grapes exists, proved essential to the renovation of the American wine industry after the repeal of Prohibition. Throughout the 1920s cultivators survived by selling varieties planted for wine making as table grapes. Published in *American Farmer* 12, no. 35 (November 12, 1830): 276–77.

Columbia, S.C. Oct. 26, 1830

MR. SMITH.

Sir,—I have sometime since promised, rather indiscreetly, to furnish for your most valuable agricultural journal, an article on the culture of the grape, principally for the table, for private gardens and also for those who furnish the markets with this most elegant fruit. Having been requested to do so, I did not know how to refuse, although I was certain that there are many persons much more able to do justice to such a subject that I am; I must, however, redeem my promise, calculating on your and your readers' indulgence for the many unavoidable imperfections of the article; for I am not a gardener, and I must rest my hopes of indulgence on my wish to do all in my power to promote so important a culture.

It is difficult and perhaps unnecessary to distinguish accurately between table and wine grapes. Many persons suppose that it is with grapes as it is generally with apples, and that, as the best cider-apples are not fit to eat, the grapes used for wine are not palatable. It is not so. All the grapes that I have seen that make good wine,

are more or less good for the table, and some are even eminent for both uses. It is true that some of the most esteemed table grapes are very indifferent for wine, such as the family of the "Chasselas,"[1] and others which make only a flat and weak wine, and although they are exceedingly pleasant and sweet to the taste, they contain but little saccharine matter. It requires, therefore, an experienced palate to enable one to pronounce certainly on the quality of a grape for wine by its taste alone. But if some of the best table grapes are not suitable to make good wine, there are but few of the best wine grapes which are not also a very pleasant and delicious fruit. Their qualities for this, are, however, very various, and are adapted also to different purposes; some being only suitable for immediate use, while others can be easily kept a long time, not only on the vine, but also after they have been gathered. It might be useful to make a full enumeration of them with the particular properties of each; but besides my inability to do so, it would render this article much too long. I shall therefore merely say, that those grapes which have a thin juice may be looked upon as unsuitable to be kept long, and that those whose pulp or flesh is firm and cracking, may be kept more or less long as they possess more or less of these qualities. These last are also the most fit for raisins.

The grape may be termed the fruit *par excellence;* for besides its various and most delicious flavors, it has deservedly the reputation of being most wholesome, and, when it is perfectly ripe, it is said to restore invalids to a healthy state, and to obviate the disorders of the stomach in dyspeptic persons. Its beauty is also of the first order, and many plants, which are cultivated with no other object than this quality, are very inferior in this respect to the grape. A plant, therefore, so eminently possessed of all these desirable qualities deserves the utmost care in its cultivation.

The principles of its culture, whether on a large scale in the fields for wine, or on a small one in gardens, for the fruit are necessarily the same; yet the protection afforded in the gardens by walls, houses, &c., together with the greater fertility of the soil, render it, in these, generally more successful. One of the principal aims of planting a vine, whether a cutting or a rooted plant, ought to be to do it in such a manner that the roots will be induced to go deeply into the soil in search of a permanent supply of moisture; for, if the roots run horizontally at a small depth, they will, in a rainy season, supply the plant with a superabundance of water, and in dry weather, this supply will be stopped or considerably lessened; and these two extremes must be injurious. It is thus that this most destructive disease of the grape, *the rot*, is supposed by judicious and intelligent persons to be produced. Mr. George J. F. Clarke, of St. Augustine, a gentleman of great observation and sagacity,

1. A white grape cultivated extensively in Switzerland for wine and grapes, it is believed to have been the first domesticated variety, farmed in Egypt 5000 years ago. The wines made from the grape are low in both acid and alcohol.

in an interesting article in the *Southern Agriculturist* for this month,[2] attributes the rot of the grape to this alternation of dry and wet weather, and in this, I perfectly agree with him. (This rot is a different disease from the mildew of the north.) The month of May and part of June are usually very hot and dry; and although the vine does not appear to be much distressed or suffering, yet the change of colour in the leaves, particularly the lower ones, shews that something is not right. During this time the earth is dry to a considerable depth, more so, perhaps, than most people are aware of. About three or four weeks of such a drought, an abundance of rain comes, which supplies the thirsty vine with a superfluous quantity of water, particularly when the upper, also called "*day light roots*" have never been suppressed, as they ought to be every winter. The consequence of this is, that the young fruit is drowned, in a manner, by it, and it rots.[3] This is certainly the fact, whether it be accounted for correctly or not; this shows the necessity of providing against this cause, which, if duly done, the effect must cease.

For the vine, then, a soil ought to be selected deep and permeable. A trench two or three feet deep made, and the bottom strewed with a compost made of well rotted vegetable matter, manure from the cow-pen, and as much as possible, of the *debris* of old buildings, old mortar, plaistering or any other coarse materials containing lime. These ingredients being well mixed, are to be spaded in the bottom of the trench, so as to incorporate them well with the bottom soil. On this, the vine is to be planted, with the roots as sound and as long as practicable, if rooted plants are used, (otherwise the cuttings are placed somewhat obliquely,) the roots are spread evenly, and covered with the surface soil taken from the trench, reserving the lower soil which is less fertile for the top; it is best not to fill up the trench at once, but rather to do it gradually and in the course of several years, this will induce the lower roots to second into the rich bed below, acquire strength, and enable them to supply the vine with due nourishment, without the assistance of the upper roots, which are to be suppressed every year as said above. The better to prevent the growth of these day-light-roots, it is thought advisable to fill up the trench, as it is done gradually, with the poorest soil or sand. It appears to me that a vine thus planted will not be liable to these injurious alternations of dryness and moisture.—This must not be looked upon as a mere plausible theory; for it is, to some extent, the European practice, which, though not given in the books for this object, is probably the principal reason of its having been adopted there, although perhaps this is unknown to writers. The practice of cutting off yearly the "day-light-roots" to the depth of six to ten inches, is almost universal in all Europe;

2. George J. F. Clarke, "On the Rot or Mildew of Grapes," *Southern Agriculturist* 3, no. 10 (October 1830), 528–33.

3. Black rot is a fungus that requires a film of water on the vine in order for spores to germinate, so Herbemont correctly associated liquid to the malady. Yet the alternation of wet and dry did not promote infection. Leaves turn black, then yellow lesions develop on them. Fruits shrivel.

although the preventing of the rot is not given as the reason, it may have originally been the cause of its adoption.

I am fully aware that this manner of planting is liable to objections, as it offers a violent opposition to nature which generally produces the roots of plants where they are most likely to answer her purpose. It is true, that, generally speaking, trees ought not to be planted deeper than they grow naturally, and that, if it be done, nature will make an effort to produce another set of roots in their usual places, and this will be to the detriment of the lower old roots, which will thereby suffer much, and, in many cases, perish entirely, to the great injury of the tree. This is true, and perhaps, philosophical reasoning; but we must also take experience for our guide, and it shows that the vine endures these encroachments on its habits. Neither ought we to view the habits of plants in their native state and in our forests as being precisely those which they would assume in different situations. In the woods, the ground is covered with leaves and other vegetable matter, which besides the shade of the trees, &c., protect the shallow roots from the direct influence of the sun and air, and compensate in a great degree the want of the depth which is here proposed to be given the vine in more open situations. The moisture preserved on the surface of the ground, in the woods, by this shade and covering of leaves, &c. must be somehow compensated, and it seems to be best done by planting at a greater depth. Those, however, who may object positively to this deep planting, may come near it by filling partly the trench with the earth from the surface, enriched with well rotten compost as above stated, and if they be careful to suppress yearly the upper roots, the lower ones will most probably acquire sufficient depth and strength to answer the desired purpose. Supposing the vines, cuttings or roots, planted as directed before, it matters not that their tops are below the general surface of the ground, because the trench will not be filled up for two or three years, when this objection will no longer exist. Rooted vines ought to be so planted as to leave only two or three buds above the ground, rather less than more, according, however, to the size and strength of the individual plant. Cuttings should be planted so as to show only one bud above the ground, and the second just below the surface. Vines planted with these precautions will grow very vigorously, and ought to have stakes to which the shoots are to be neatly tied with some soft substance, so as not to injure the tender bark. It is best to suffer cuttings to raise only one shoot, the others being carefully rubbed or broken off. On rooted plants two or more shoots may be suffered to grow according to their strength. In either case the lower side shoots or "interleaves" should be cut off above their first leaf, as high as it is intended to prune the following winter, and all above that, are suffered to grow as they please. The main shoots should not be topped. There is a diversity of opinion as to the best season for taking off these "interleaves," and also as to the manner of doing it. Some advise their being broken or pinched close off as soon as they appear, others leave them till about mid-summer, and then break

or cut them off so as to leave one or two leaves on them; I prefer the latter mode, as being the least opposed to the object which nature may have in view in producing them, whatever that may be. It might, perhaps, be better to leave them altogether.

The following winter, the shoots produced from the cuttings, if pruned at all, are to be cut down to one good bud or two at most, if the growth has been very strong, and those produced from the rooted vines are to be pruned according to their size, vigor, and the object one has in view. If very strong and the object is to cover the arbor, espalier or wall, they may be left about two or three feet high, and when all danger of late spring frosts is over, break off all the shoots below the two upper ones; these are to be trained up and treated in the same manner the following winter so that in three or four years, the arbor will be nearly covered over. When the height is not desired soon, these strong shoots are to be pruned down to two or three buds, and raised gradually to the height wanted. In pruning vines, there is generally much more danger of leaving too much wood than of pruning too short. When the vine has attained nearly the extent intended, all the weak shoots of the preceding year, and also all those that are misplaced or too crowded, are to be cut off close to the old wood, and the other cut down to two, three or more buds, according to the situation and vigor of the shoot. It is sometimes desirable to fill up a vacancy, and this may be done by selecting a very strong shoot, and leave it as long as convenient, so that it be still stout at the place where it is cut off, and suffer only two or three buds to grow, rubbing off all the others, unless one should be much wanted for filling up a vacancy on the side. By pruning very short, the buds left will produce a very strong growth, and the fruit generally bears a proportion to the branch that produces it.

It is desirable that grapes for the table should not only be very good, but as handsome as their nature will admit. To attain this object any thing that may affect them injuriously is to be removed from the clusters. The claspers, for example, if left, are apt to twist round a bunch of grapes, and if it be not removed in time, will injure it greatly. When any accidents or disease happen to any of the berries, such ought to be cut off with a small pair of scissors, taking off the little stem of the berry close to the main stem of the bunch. Some even thin them in this manner when the bunches are too compact. The consequence of this operation is, that the berries have more room, ripen better and grow larger, and make a much better appearance. The leaves that grow near the fruit ought never to be pulled off; it is never done without injuring it, unless perhaps when the fruit is ripe. If, however, some necessity should occur to take away leaves so situated, it ought to be done with a knife or scissors so as to leave the stem of the leaf.

After the second pruning of such vines as were raised from cuttings, or the weak ones from roots, when they have hitherto been left very short, they are treated as the strong rooted ones were at the first pruning, and continued in the same manner as being two or three years younger.

In planting a vine to be trained against a wall or fence, it ought to be placed at the distance of at least two feet from it, and incline it gradually to it. A good manner of training them against a wall is to leave the strong shoot about three or four feet high; suffer only two buds to grow on it, that they may form strong shoots, and train them horizontally one on each side. The next winter, prune these to a suitable length, and leave also only two buds on each to grow. The upper one of these is trained in extension of the line of the two first, that is horizontally, and the other bud obliquely, so that [ ], four shoots be at equal distances from each other, and continue in this manner till the wall, espalier, or bower is complete. Some vines are so vigorous and gigantic in their growth as not to be restrained; these, of course require a great space, and I have been obliged to double an arbour to find room for the vines to expand, and now they have scarcely room enough. Others, though healthy, are much less in their dimensions, and are unfit for covering arbours; these are to be planted nearer each other, and trained up a low frame in the form of a fan or any other according to fancy: they require shorter pruning than the former.

After grapes are ripe, they may be preserved for a long time on the vines by putting them in thin linen, cotton or paper bags, by which they are protected against birds and insects which would otherwise devour them: they may also be kept after they have been gathered in various ways; but as the modes of doing this are found in books that are in the hands of every body, I sincerely wish them all the success which so worthy an undertaking merits.

I am, sir, your most obedient servant,

N. HERBEMONT

Herbemont's Madeira.

May 27, 1831

Of all the grapes that Herbemont grew, he cherished most one that he discovered growing on the plantation of Daniel Huger in Columbia, South Carolina, shortly after his arrival in the city. He invariably called this grape "the Madeira" throughout his writings and never claimed it as his patrimony. A globular, round, brownish grape, it most resembles Verdelho of the classic Madeira quartet of Sercial, Bual, Malvasia, and Verdelho. But it would not be mistaken for a true Madeira grape by any person familiar with the varieties. A complex natural hybrid that appeared in the late eighteenth century in Georgia, it proved productive, disease resistant, and vigorous in warm regions. The fruit was slow maturing and the vine sensitive to cold, so it proved less viable in the North, where the popularity of the Isabella, Catawba, and, later, the Concord endured undiminished throughout the nineteenth century. In 1829 Herbemont began distributing cuttings of the grape on a large scale,[1] and it quickly won a following from Maryland to Ohio to Mississippi. Growers in 1830 began calling it "Herbemont's Madeira" to distinguish it from Bland's and other "Madeira" grapes.[2] As a matter of honor, Herbemont felt compelled to publish this letter disavowing any claim to having discovered or invented the grape. Gideon B. Smith, the editor, replied, saying: "If Mr. Herbemont is not entitled to credit for originating this excellent grape, he is richly so, for bringing it into notice and extending its cultivation. There is no more appropriate mode of bestowing honorary rewards upon such public benefactors, than by denominating the plants they have produced or brought into general use by their names."[3] Published in *American Farmer* 12 (October 21, 1831), 101.

1. "Cuttings of this valuable Grape can be had by applying to the subscriber, at whose residence it may be seen, the coming season, in great perfection. To facilitate the extensive culture of the vine, Mr. Herbemont has commenced a nursery on a large scale, and will have for sale, next winter, some thousands of vines of the finest kinds, both for wine and for the table. These may be obtained through the same agency, at rates that will fully cover expenses, and no more." G. Fitzhugh Jr., "Herbemont's Madeira," *American Farmer* 11, no. 43 (February 5, 1830), 376.
2. See "Grape Vines," *American Farmer* 11, no. 52 (March 12, 1830), 411.
3. "Herbemont's Madeira Grape," *American Farmer* 13, no. 13 (June 10, 1831), 103.

Columbia, S. C. May 27, 1831

MR. SMITH:

Dear Sir, ____ In No. 9 of the current volume of the *American Farmer*, noticing the grape seed I sent you for distribution, I observe with regret that you give me credit for having originated from the seed the valuable grape, designated "Herbemont's Madeira." This error, although not of much consequence, ought to be corrected. A man ought to be satisfied with his due, fortunate if he gets it, and I ask no more. I found this grape cultivated here in gardens when I first came to this place. I believe it was called "Madeira grape." It is the same known in Georgia by the name of "Warren and Warrington grape."[4] I have not been able to trace it back to its origin, though for a long time I was inclined to think it came from Madeira. Having received it several times as a native grape, and some other reasons not necessary to be detailed here, induce me to believe it one of the many valuable plants brought to cultivation from our native forests. No later than yesterday I was informed by a very respectable and intelligent gentleman from Georgia,[5] that it was believed in that state to be a native, he thought of North Carolina. A gentleman who resides a few miles from this place gave me last year cuttings of a vine which he found on his plantation where he does not suppose it can have been planted, and it proved to be the very same grape. I am not yet, however, fully satisfied on this subject, because I also got it from a gentleman who called it a "Spanish grape,"[6] though it is possible or even probable that in this he is mistaken. If any of your numerous readers can throw any light on this subject, many of your subscribers, as well as myself will be much gratified to know the origin of a plant that bids fair to be a source of wealth and enjoyment in this country.

I am not aware that I ever said any thing which could have led to the belief that I had raised this grape from the seed. I have sown seeds of it, and I shall probably know the result next year. As to its being called by my name, I really do not know who named it thus first. I have taken great pains (and expense) to propagate it and extend its cultivation by sending it into various parts of the United States, and many persons in writing to me designated it by my name, probably only to distinguish it from the numberless grapes called "Madeira" every where throughout this country.

I am, very respectfully, dear sir, you obedient servant,

N. HERBEMONT

4. Thomas McCall, miffed at the growing fame of the grape with Herbemont's name attached to it, wrote his elaborate "Remarks on the Warrenton Grapevine," *American Farmer* 14, no. 50 (February 22, 1833), 393, providing an account of its genesis more mystifying than edifying. In the letter he erroneously claimed that Herbemont first made wine with the grape in 1826. Herbemont's vintages were first offered for general sale in 1823. He had experimented with wine from the vine as early as 1814.

5. Not McCall. Perhaps Gen. David Blackshear, Georgia's other experimental grape cultivator of note during the 1820s and 1830s.

6. The name "Black Spanish" was applied popularly to the Lenoir, a closely related grape to the Herbemont.

Observations on the Rot of the Grape, and Grafting of Foreign Vines on Native Stocks:

September 4, 1831

Weather has always been the bane of grape growers. No matter how experienced, how scientific, how fortunate the cultivator, sooner or later a season of excessive rain will come and ruin the crop. The problems that afflicted Herbemont in the 1831 growing season rivaled those of 1828. In the wake of this trouble, the normally positive Herbemont fell victim to a bout of depression, but his sense of responsibility to the cause of science and the spread of agricultural information prompted him to pick up the pen, report the bad news, and reflect on the general principles that could be drawn from the experience. Published in *Southern Agriculturist* 4, no. 11 (November 1831), 572–76.

"Columbia, S.C. Sept. 4th, 1831.

Dear Sir,—I received your letter of the 31st ultimo, and being confined to the house by bad weather, I answer it in spite of my disinclination to writing, lest, by putting it off for a few days, I may neglect it too long. We have had such a continuation of rains and fogs, that the fruit generally has done very badly, and that which did not rot, was almost tasteless. My grapes, of which I had a very great abundance in the early part of the summer, rotted, not only in June, but also in the season of maturity. The great rains caused the skins to burst, and what with the help of birds and numberless insects, such destruction I never have seen before, and hope never to see again. This, together with the influence of this enormous load of moisture on my bodily frame, so acts on my spirits as to lower them below par, and exposes me to attacks of the blue-devils.

I would recommend to take up wild vines for grafting or any other vines for transplanting, as early in the fall as they have lost their leaves, not even minding a few remaining green ones at the ends of the shoots. Shorten them only for the convenience of handling them, and reserve the cutting them off, till you are ready for grafting. I think the part of the top which is left is of service, probably, helping the growth of young roots during the warm part of the winter. At any rate, it is best for

grafting to have a fresh cut, the cleft being then in wood, is more full of sap, which is essential. The flow of the sap is a sine qua non in grafting, and without it, failure is, it seems to me, almost certain. If you have an ice-house, I would advise to have your scions for grafting cut off the vines as early as practicable to deposit them in a box or tub filled with clean sand, leaving (or not) the upper ends of the scions out, and put the box in the ice-house. If you have not such a convenience, deposit the box in the coldest cellar, or other place you can get, keeping the sand only moderately moist. I say clean sand, I only mean moderately so. The object of this is to prevent the scions from getting mouldy, and to keep them from vegetating till they are wanted for grafting, which ought to be as late, at least, as when the stocks on which you intend to graft have their buds swelled and ready to burst into leaves.

My mind is also wavering as to the rot of grapes being in a great degree caused by their proximity to the earth; although I had at one time, as I thought, full and sufficient proofs that they resisted it almost in proportion to their distance from the ground; their being shaded by the foliage was, I considered (and still do) of considerable advantage, provided the circulation of the air is not excluded. My mode of training offered these advantages; for at the height of seven or eight feet, the bearing part of the vines running horizontally, the fruit, by its own weight, hangs down, and the leaves are as umbrellas over them. The sight of vines thus trained and in full bearing is most beautiful, and several of my friends here, as well as myself, had, this summer, a most splendid show of the kind, till the destruction above noticed made it distressing to look at. My vines that were thus trained, at first resisted the rot almost entirely for several years, whilst the others that had not yet been carried up continued to rot as usual. It is proper also to observe, that vines that are bearing for the first or second time, are, sometimes, almost exempt from the rot, though not always. I am certain, however, that this great curse is caused by the superabundant moisture, which, besides that it affects the grapes directly, gives rise to myriads of insects, which all help in the work of destruction.[1] I am fully satisfied, that during the two weeks preceding of my grapes, I lost at least one hundred gallons in my garden along by the rain, and fogs, and birds, and insects. Yet notwithstanding all this, I made from my garden alone, about two hundred and sixty-six gallons, which is, I think, less than one-eighth of an acre, and this, notwithstanding the rot in the early part of the summer. What the quality of the wine will be, is another affair. I put all my ingenuity to task to make it good; but, if I succeed, I shall be entitled to great credit.

Several of my friends here who train their vines much higher than I do, one of them particularly, (Dr. Davis)[2] have been perfectly free from rot. May it not be

1. Herbemont here identifies the crux of the problem with the black rot fungus.

2. Dr. John Davis, one of the circle of Midlands vintners and member of the South Carolina Agricultural Society. His own reflections on grape culture and the black rot appeared in "On the Culture

that, as they are more in the center of the town than I am, there is some difference in the moisture of the earth by its being covered with many houses? This is possible, and appears to me at least a plausible argument. As to getting rid of the rot by grafting on the native stock, (I wish I may be mistaken) but I think you will not find this to be the result. The native vines, most of them, make good stock to graft on; but I do not think they are superior to our vigorous, cultivated vines, and I have observed no difference, though I have grafted a great deal on both.[3]

Your article on 'caprification,'[4] reminds me that I have fig trees, which I raised from the seed of the large, imported figs. They suffer so much in our severe winters, that they have not yet done well. Some of them produce a small fig which does not get soft, but turns blue and drops. One, only, has produced two good figs some years ago; but the tree is in a bad situation, and is not at present thrifty. The figs were not large; green till two or three days before maturity, when they turned of a deep blue: they were very sweet. Several others have shewn fruit; but they have not come to any thing. It is possible they are only fit for 'caprification.' They would probably do better in the low country, and if you wish it, I shall, this fall, send you some suckers of them for your and your friends' experiments. I am yours, respectfully,

N. Herbemont.

of the Vine," *Southern Agriculturist* 4, no. 1 (January 1832), 1–4. He concurred with Herbemont on the need for maximum air circulation around the fruit.

3. Herbemont is correct in indicating that root grafting did not influence the incidence of rot. It did, however, protect against phylloxera, the defoliating insect that troubled the east. Herbemont also dismissed the notion that wild vines were superior to the Herbemont vines he grew in his vineyard in their effects. Though Herbemont did not realize that his Madeira grape was a native-French hybrid, it possessed the insect resistance of native *aestivalis* vines, since it was related.

4. Hanging on cultivated fig trees branches of wild fig infested with fig wasps that aid in the reproductive process.

Afflictions

Bad Weather and Insects.

September 24, 1831

Herbemont in this letter collects most of the horrors that face grape cultivators—wet weather, rot, birds, and insects. The terrible weather of the 1831 growing season opens the account, a letter on two of the insect pests troubling vineyards closes it. Yet the depression that characterized his "Observations" of September 4 has given way to a sardonic jocularity. The letter extract introduced to the reader two of the more lurid insects preying on the vine. The first insect—the grape root borer, *Vitacea polistiformis*—is the larval form of a moth that resembles a paper wasp.[1] It particularly troubles vineyards in the deep South, but infestations have recently been experienced as far north as Virginia. In extreme cases, it can ruin a vineyard. The white ants are termites who devour grapevine roots. Published in *American Farmer* 13, no. 32 (October 21, 1831): 252–53.

On the Culture of the Grape.

Columbia, S. C. Sept 24, 1831

MR. SMITH:

Dear Sir,—I rejoice much to see the increasing taste for the cultivation of fruit trees, and particularly of the vine in general through this country, and particularly in Baltimore and its vicinity: Any thing therefore that will tend to elucidate the particulars of the culture of the vine, and extend the knowledge of its habits, must be useful, to some degree, and in this view it may not be useless that I give you an account of the disastrous consequences of the last most unfavorable season for this delightful fruit. With us all this summer has been an almost uninterrupted series of rains; such, I believe, as was never witnessed by our oldest inhabitants.

1. O. E. Liburd and G. G. Seferina, *Grape Root Borer: Life Stages and IPM Strategies in Florida*, Fact Sheet SP 330 (Entomology and Nematology Dept., University of Florida, Gainesville, 2004).

The temperature has also been, with the exception of a very few days, much below our usual standard. The quantity of grapes on our vines was uncommonly great; but these continued rains produced a considerable rot in the early part of the Summer; and this never entirely stopped, as it usually does, after a short period of time. The rains continuing, the effect on the grapes as they approached maturity, was of swelling the berries; many of which burst on the slightest touch by insects, birds, or, I believe, without being touched at all, and this attracting the myriads, the consequent devastation is almost incredible. Indeed, a lady in light colored clothes could not safely walk under our vine arbours without an umbrella, for it actually rained wine. This is not, however, the whole of the mischief done; but this juice of the grape which was thus *unlawfully running away*,[2] compelled me to gather my crop for wine before the grapes were as fully ripe as it was desirable they should be, and this juice being chiefly made up of our superabundant rains, and not having had a sufficiency of dry heat, was exceedingly deficient in saccharine matter, as for example: last year the juice of my Lenoir grapes weighed by Beaume's areometer full 13 degrees; and this year it weighed only between 7 and 9 degrees, and it required three quarters of a pound of sugar per gallon of must or juice to bring it to the same degree, viz: 13 degrees. That it weighed the year before without a single grain of it. The other kinds fared a similar fate, and it was the opinion of several of my friends, as well as my own, that in my garden alone I must have lost during the two weeks preceding the gathering of the grapes, near 100 gallons of wine; yet, notwithstanding this enormous deduction in the crop, I made from that alone about 260 gallons. Aided by an intelligent friend, we measured the ground planted by these vines, and it was found to be a little less than one sixth part of an acre; which makes it at the rate of 1500 gallons per acre of wine, such as it is. I say such as it is, for it cannot be supposed that wine made under such unfavorable circumstances, can possibly be of a superior quality, although I endeavored, as much as was in my power, to supply the deficiency of saccharine matter in the fruit; yet, having examined it particularly lately, I am induced to hope I have succeeded tolerably well.

I tried this season the operation of ringing, otherwise called annular operation, on many vines, with a view of testing more fully its effects than I had yet done, and I found that, although it increased considerably the size of the grapes, and of vines themselves above the operation, it had no effect in preventing the rot. Valuable effects, however, are produced by this ringing, which is, as you know, the taking off a ring of the bark clean to the wood immediately before the flowering of the vine or other fruit tree. One of them is, that noticed above, of increasing the size of the fruit, and forwarding by eight or ten days, the period of its maturity, and if it be done before the blooming, (for it may also be done with advantage afterwards, even when the grapes have acquired near half their size) it has the valuable effect

2. Legal designation of minors who flee home.

of preventing, in a very great degree, the *coulure*, (we want an English word to express this) which is the failure of the setting of the flower to fruit, to which several kinds of grapes are very subject. Another advantage obtained by it is, that if it be desirable to fill up a vacant space in a bower or espalier, &c. it may conveniently be done by performing the operation on a branch trained in that direction. Its effect is to encrease considerably the size in length and thickness of the part above the ring, by which means the vacancy is easily filled up. This operation also being done on a vine which it is desirable to multiply, affords great advantages; for, if a flower pot, a box, or any other suitable thing is so placed that the ringed part of the vine be inside, and it is filled with good soil, and gently and frequently watered when it may be needed, it will take root so well as to form an excellent vine the very next season. It has only to be cut off below the box or pot, close to the hole through which it was inserted, and carefully planted, without disturbing the roots, in a suitable place. Speaking of planting vines, it may as well be noticed here that a plenty of room ought to be allowed for the spreading of the roots; for these extend much farther than most people are aware of, and I presume this is in proportion to the extension of the vine itself above ground. As a remarkable instance of this, I shall copy here a note which I received a few days since from a very intelligent friend of mine.[3] It is as follows:

"I have long thought that grape vine roots extend farther than is generally supposed, and I now have the proof. My gardener cut in two with grubbing hoe a grape root, which I traced to my artichoke bed, forty-three feet from the stem of the vine. There I lost it among my artichoke roots, which I would not disturb. At the point where I ceased to trace it, it was still as large as my little finger. The fragment of the root I send you (about 15 feet) will show the size. I have no doubt it extends from 6 to 10 feet further. The vine to which this root belongs, is about 8 years old and thrifty. It is our Columbia Madeira. This root ran at the depth of 7¼ inches, through the bed, without dip. It ran some distance down a walk and crossed. Here it was 3½ inches below the surface. Where I ceased to trace it in my artichoke bed, at the distance of 43 feet from the vine, the dip had become very considerable, a foot at least. This I attributed to the resistance it met from a large root. You know we agreed this Summer that the vine has a host of enemies above ground. I now have to report two foes below the surface quite as fatal as any above. About fourteen years ago, I transplanted into my garden a vine of the small white grape; I believe it is the sweet water.[4] It bore the second, third, and fourth years, but the two last the fruit wilted, and did not ripen; from that time it ceased to bear, and has dwindled away, the leaves becoming very small, the annual shoots few and wiry, and the whole vine having the appearance of decay. I had it dug up yesterday

3. Perhaps Dr. John Davis.
4. A favorite white table grape cultivated extensively in England.

to ascertain the cause, and found the large roots had been eaten out, and only a shell left. After some search, I at length found the enemy, a large white worm, an inch and half long, with a reddish brown head, armed with a pair of hard forceps, capable of perforating wood, and working horizontally. He is as thick nearly as the common grub, but differs from him in several respects; he is nearly half an inch longer, the first half of the body has rugae, and is larger than the latter half; he walks upon his belly, while the grub, you know, on a hard surface, walks on his back, and not on his feet. I found him imbedded in a large root, at the termination of his excavations, and with difficulty cut him out alive. I put the marauder on my mantel piece, loosely wrapped in paper, intending to send him to you, but in my absence for some hours, he perforated his paper prison and escaped. I have not been able to find him.

"Against this enemy we may not be able to guard, but we may guard against another I am about to mention. I had to dig up a four year's old vine that stood in a new walk I wished to open. This vine has never been thrifty, nor borne fruit that I remember. I found the root in a decayed condition, and a nest in it of hundreds of white ants. They seemed to have hollowed out a large space between the bark and the wood of the root. Possibly they may have found the root decayed, (I believe this the correct view of it) and on that account availed themselves of it to construct a nest. Our gardens are filled with myriads of these insects of every description, which boiling water would readily destroy. With respect, &c."

The apparent importance to the vine of the long horizontal root mentioned here, seems to render doubtful the propriety of suppressing all the upper roots as it is recommended in almost all the books on the subject of the culture of the vine; but although I am not yet very fully satisfied on this subject, I incline very strongly on its propriety; for if the rotting of the grapes is caused chiefly by the alternations of dry and wet, it cannot be doubted that roots near the surface of the soil must yield at times a much greater supply of moisture to the vine than at others, and thus help in doing the mischief; whereas, if these roots are every year cut off and the lower roots can find an easy progress in a loose and good soil at a greater depth, they cannot certainly be as exposed to the effect of drought, or suddenly to an undue abundance of moisture.

If you think, sir, that these desultory observations can be of any service, you may insert them in your most valuable agricultural journal.

I am, very respectfully, sir,

Your obedient servant,

N. HERBEMONT

Letter to George Fitzhugh, Jr.

American Wine.

September 2, 1832

Publication of this letter to George Fitzhugh Jr. marked Herbemont's anointment as the premier vintner in the country. Gideon B. Smith, editor of the *American Farmer*, prefaced the text with a testimony asserting the medical utility of Herbemont's wine for gastric complaints and proclaiming the supremacy of its flavor over all other American wines of his experience. Smith, besides being an active promoter of grape culture in the pages of his journal, was a connoisseur of note and an intimate of that circle of planters and wine enthusiasts who had formed the Maryland Society for Promoting the Culture of the Vine. Smith's declaration culminated a growing chorus of approbation for Herbemont's vintages, including the repeated praise voiced by America's premier practical botanist, William Prince, in his landmark 1830 volume, *A Treatise on the Vine*.[1] One consequence of this declaration was that Herbemont's disquisitions about viticulture during the final years of his life tended to treat more about wine making than grape culture. George Fitzhugh Jr., the recipient of this letter, was Herbemont's agent in Baltimore for the sale of vine cuttings. Still in his twenties, Fitzhugh would later become one of America's first sociologists, an ardent defender of slavery, a bibliophile, an ardent anticapitalist, a scientific racist, and a public intellectual who preferred print to people. Published in *American Farmer* 14, no. 30 (October 5, 1832), 233.

We are sure that all our readers will read with interest the following letter from Mr. Herbemont, on the subject of his wine making. We would here take occasion to remark, that the quality of the wine made by Mr. Herbemont is peculiarly adapted to the use of invalids. A few months since a respectable physician called on us for the purpose of obtaining some for a young lady in very delicate health,

1. "Mr. Herbemont has made wine from it [the Lenoir grape], which resembled Burgundy" (140). "The excellent wine made from this grape [Herbemont Madeira] is called 'Palmyra,' by Mr. Herbemont, being the name of his plantation, where probably the first wine was made from it in this country" (154). "Nicholas Herbemont, Esq., from whose vineyard I have received specimens of some choice wines" (353).

who could retain no other in the stomach. Several other kinds had been tried, and neither expense nor trouble spared to obtain the best wines, but none could be found that she could take, till by some means a bottle of Mr. Herbemont's was obtained, which was not only retained but highly relished, and had the desired effect. We are assured that both the Doctor and patient consider her entire recovery to be attributable to this wine. This is an important characteristic of Mr. H's wine, and enhances the value of it greatly. The wine that Mr. H. calls the white wine, is really the most delicate and delicious flavored of any we ever tasted. We tested its quality pretty extensively, having expended a considerable sample of it among epicures in the article, all of whom, without an exception, pronounced it particularly fine.—The white wine is made from the same grape as the Palmyra, or Madeira colored, but by a different process, by which the coloring matter is excluded with a great part of the astringency.

Columbia, S. C. Sept. 2, 1832

GEO. FITZHUGH, Jr. Esq.

My Dear Sir,—On the well founded supposition that you take a great interest in the good cause in which I have labored hard and long, I thought that, by waiting a few days, I could give you the result of my crop this year.

I made less wine from my garden this year than usual by near one hundred gallons, and this was caused, I presume, by the very wet season of the preceding summer, which prevented much of the young wood from acquiring a due degree of maturity to resist the early frost and most severe winter that followed. This cause, and also that of the vines having borne an exceeding large quantity of grapes, induced me, or even compelled me, to prune very severely, so as not to suffer the vines to produce so much fruit this year. The consequence was, as I expected and designed, that the crop was much less—but it was very prime in quality; for this season has been favorable except towards the last, when it rained almost incessantly, which injured the grapes in my garden, though not at all those at Palmyra. Another great, the greatest, cause of injury was the birds and the June-bugs,[2] and bees, and wasps, &c. Of the June-bugs, we must have killed nearly half a bushel; for I carry on against them a war of extermination. Fortunately I have not this pest at Palmyra, the soil of our sand hills being too poor, I suppose, to raise them. This being the first year I have any thing like a crop at my farm, I made my wine there by itself, without bringing the grapes, as formerly, to Columbia, to be mixed with those of my garden. Besides this, I had another reason which was, that I was obliged to gather at home, notwithstanding the rain, or else I might have lost one half by the pests named above; whereas the grapes at my farm were not suffering sufficiently to induce me to run the bad chance of vintage [ ] weather—birds only

2. *Cotinus nitida*—a great lover of fruit, particularly grapes and peaches.

committing depredations there. The making of the white wine gives about double trouble, as the grapes must be pressed as soon as gathered, and I was three days gathering, notwithstanding my having had for two days nearly thirty of the poor people of the neighborhood, besides all of my own people, house servants and all. Finally, I finished pressing to-day the Palmyra, and the amount of the whole crop is near nine hundred gallons, of which the whole amounts to two-thirds. I have every reason to believe that the wine will prove of a very superior quality, particularly that made at Palmyra, which I shall not mix with the rest. Of the white alone made there, there is very near five hundred gallons. What surprised me was, that the wine called Palmyra, is as yet of a rich red color, which has never yet been the case before, though I have had it generally slightly tinged, and then the red color was deposed in the lees; but I do not think that it can depose this year all its color and leave it merely, as usual, of a deep Madeira color. The cause of this must be looked for in the long drought before the rains set in, and although it rained pretty generally every day for a month, (with little exception,) we have not had a single one of these tearing-every-thing-showers usual in this climate at this season. Add to this, that I was most highly favored with dry weather all this week, except a pretty heavy shower, which had the goodness to come in the night. The grapes were then must fully and regularly ripe, and I hope, therefore, that if Bachus himself could condescend to pay us a visit and drink some of my wine, he would readily acknowledge that he never had drank better in his lifetime, and not often as good!

You must allow, my dear sir, a little bragging, and remember the fable of the owl and the eagle respecting their young.[3]

I am, very respectfully, and with great friendship,

Yours, &c.

N. HERBEMONT

3. One of Perrin's fables popular in antebellum America for teaching children the French language.

Observations on the Planting of the Vine and Rot in Grapes

May 28, 1833

Herbemont used a disagreement with neighbor and vintner Abraham Geiger as a pretext to discuss how the root system of the grapevine could be sculpted by the cultivator to maximize the vigor of the plant and its resistance to disease. In a letter to the *Southern Agriculturist* titled "On the Cultivation of the Grape Vine,"[1] Geiger had doubted the efficacy of deep trenching in planting vineyards and also preventing black rot. Like Herbemont, Geiger struggled to understand the nature of that malady of the grape. He speculated it might be a pollution introduced by the predations of the Hessian fly. He and a Mr. Heller examined grapes under a microscope, attempting to determine the rot's character.[2] They did not discern that the affliction was a fungus. Perhaps only one man living in the United States at that juncture could have determined this—Lewis David de Schweinitz. This German-American Moravian had lived in Salem, North Carolina, in the 1810s, where he published in 1818 the first masterwork of American mycology, *The Fungi of North Carolina* (1818). In 1833 he was attempting to complete his summary view, "A Synopsis of North American Fungi."[3] The character of the rot—*Guignardia bidwellii*—would not be determined until decades after Herbemont's death. In an editorial coda to this letter, J. Legaré wrote "Mr. Geiger's success will give an impetus to the culture, which will show itself in the springing up of vineyards in many parts of our State. The culture, we are happy to learn, is already spreading. The great check to this has been, and is, the rot, which sometimes destroys nearly the whole crop; if a remedy for this can ever be found, then, indeed, will the vine become a favourite" (348). Published in *Southern Agriculturist* 6, no. 7 (July 1833), 342–48.

1. *Southern Agriculturist* 6, no. 3 (March 1833), 124–28.

2. "Copy of a letter addressed to Mr. N. Herbemont, by Mr. Abraham Geiger, and offered by him to the United Agricultural Society of South-Carolina," *Southern Agriculturist* 3, no. 7 (July 1830), 363.

3. "Synopsis Fungorum in America Boreali media degentium," *American Philosophical Society Transactions* 4 (1834), 134–316.

Columbia, (S.C.) May 28, 1833

Dear Sir,—I have observed in the number of the *Southern Agriculturist* for the month of March last, a communication from that very interesting and persevering cultivator, Mr. Abraham Geiger, on the subject of the culture of the vine, and particularly on the manner of planting it to the best advantage and least expense; and also on the cause of the rot in grapes, &c. Any thing proceeding from so intelligent a source is highly deserving of full consideration, and my personal regard for this gentleman, ought not, and cannot prevent my defence of modes of planting and culture which I have hitherto defended, because, I could but presume that practices recommended by almost all writers on the subject, must have been thus advocated from a consciousness of honest motives, based on the experience of ages; but surely not with a view of causing 'the culture of the vine to be looked upon as something mysterious'—and thereby 'contrived and intended to be made difficult and laborious.' It is very natural for a man who has acquired experience by the practice of a particular art for many years, to imagine that there is no difficulty or mystery attending it. He is also apt to forget that it has probably cost him the labour and observation of years to come to this conclusion. Let any man of any common share of understanding undertake the practice of any art which he has only heard or read of, and simple though it may be, it will require a number of trials before he can reach the desired object, and find out that there is no mystery or difficulty in the practice.

That there is no more difficulty in the culture of the vine than in that of any other plant, appears evident enough from the scale of intelligence of the common vine-cultivators all over the world where it is cultivated for wine. It cannot be denied, however, that each plant has its peculiar habits, and that it grows, thrives, and is as fruitful as its nature admits, only in soils and situations particularly suited to it. The planting of trees of any sort is certainly a very plain and simple operation, depending only on the plain sense and observation of nature in her mode of proceeding, and yet there are, comparatively, but few that perform it in the most suitable manner. The planting of the vine in deep trenches is, I believe, a general practice in Europe; though, probably not equally deep every where; and this, it is fair to suppose, is the result of experience. The first person who recommended it clearly, distinctly, and forcibly in the *Southern Agriculturist*, is George J. F. Clark, Esq. of St. Augustine.[4] The evident intelligence and sagacity of that gentleman induce me to examine more fully and critically this subject than I had hitherto done, and the result was a confirmation of my previous views of the subject, according with those of Mr. Clark's and the experience of ages.

4. See headnote for "On the Proper Distance for Planting a Vineyard," *Southern Agriculturist* 2, no. 12 (December 1829).

The transplanting of trees much deeper than they originally grew, certainly "*is a departure from the order of nature;*" for, "*How often do we see them in their native state, put forth their roots to the surface*," &c. As Mr. Geiger further very well observes: "to assist nature and not to depart from, is in my view the correct course." This is and has always been the object of the most eminent cultivators, and they have only differed as to the accuracy and depth of their alterations on nature's various processes, by which the clearest-sighted have usually been the most successful. A judicious follower of nature in her operations, avails himself of her willingness to be apparently contradicted, when the opposition is really more in appearance than in reality. He coaxes her and prevails on her to yield somewhat to his convenience, and she is usually found very accommodating in such cases.

Were the vine in a state of culture similarly situated as those in a state of nature, and were the products of cultivation expected to be not greater, or superior in quality to those in the woods, the case would be very different from what we find it. We must, therefore, look into the difference of situations and the objects in view, adapt ourselves to the existing case, follow nature in such a manner as to compensate for conditions which are unsuitable to our aims, and unattainable in our circumstances. Vines in a state of nature, in the woods, grow in shady ground, which is ever covered with the decayed and decaying leaves of the surrounding trees and bushes, and the remains of all other plants that grow in their vicinity, the collection of many years. This covering retains at all seasons of the year a degree of moisture at least equivalent to that which would be produced by some inches of light soil kept clear of grass and weeds, and thus perfectly open to the influence of the wind and sun. The principal roots of the vines in their native state, go as deep in the earth as the nature of the soil will permit, and the upper ones run superficially immediately under the loose bed of vegetable matter than covers the ground. If you clear the ground, cut away all the trees, bushes, and all the other vegetables but the vines, and keep it clear of grass and weeds, the effect will be that the superficial roots of the vines (except the large ones which afterwards sink deep in the ground) will perish, or, if not, will not furnish the vine with its accustomed quantity of moisture for its nourishment with its usual regularity. In wet weather they will furnish a superabundance, and in a long drought none or scarcely any. The consequence of this must necessarily be that, if the plant does not perish, it suffers and languishes till it has accommodated itself to its new circumstances. Many experiments have proved to me that this is the result. The vine (some few delicate kinds excepted) is a very hardy and vivacious plant, and it readily suits itself to any situation that does not too violently oppose its habits. Make a trench three or four feet deep, less if you come to a stiff clay, cover the bottom of it with soil, from the surface mixed with a well rotted vegetable compost, and in this plant good, well grown vines from two to six years old with their roots as entire as practicable; fill

the trench only to about eight to twelve inches, and they will certainly grow well and scarcely feel the effect of their having been transplanted. The greater abundance of water that will thereby be thrown to the roots will greatly promote the growth. Let the trench be gradually filled up in the course of about three years with light sandy soil, and they will be gradually accustomed to this depth, and suffer no root to remain with this depth from the surface; but cut them away every winter at the time of pruning. The consequence will be that the vine will depend on its roots, which are deep in the soil and where the supply of moisture is most regular, never very scanty; for a severe drought is seldom or never found to reach the depth of these roots, and never too abundant; for, water in the longest spell of wet weather, reaches to this depth but slowly and gradually. It may be said that there is some trouble attending this mode of planting; but it must be recollected that when it is done, it is for several hundred years, and that a good thing that lasts so long is not too dearly bought by a little extra trouble. The vine is very seldom, if ever, seen to suffer from drought. Its deep roots pump the moisture from far below the surface, and its abundant leaves imbibe it from the vapours of the atmosphere, which they probably condense by their coolness; so much so, that in the driest weather, when every plant in its vicinity is destitute of dew in the morning, a drop of it may be seen at every point of the vine leaves.

Let us now contrast the effect produced by the shallow planting and the retaining of the surface roots. The lower roots in this case will still tend to go deep according to the nature of the soil, and, as long as the moist season lasts, the vine will grow with a very great vigour. The upper roots will furnish the plant with a great abundance of food; but when the drought comes severely, the vine will have to depend almost solely on its lower roots which are not themselves deep enough to be within the reach of a regular supply of moisture; but are affected more or less directly by the weather; whereas the upper roots that run horizontally near the surface, and which in wet weather used to furnish the vine too great a supply, are now left in an almost perfectly dry bed of earth, and exposed to the scorching sun. The quantity of roots being thus divided between an upper and a lower tier, the latter must, of course, be much smaller, and inefficient than must be the case when the upper tier is suppressed, and the strength of the whole, yielded to the lower. Any one must judge *a priori*, that such a state of things must be opposed to the welfare of the plant, and most particularly to that of its fruit. It must be here observed, that very great vigour of growth in the vine, and indeed all fruit-bearing-trees, is unfavourable to the abundance, perfection, and richness of the fruit. And this brings me to notice the principal cause of the rot in grapes.

The grape, like all other fruit, is beset with myriads of enemies who prey on it, and Mr. Geiger is certainly right in accusing insects of causing great havoc in vineyards, whether by their eating, or still worse, by depositing their eggs either within or on the surface of the fruit, by which a kind of rot is induced. It is not

merely one kind, but numerous kinds of insects that commit these injuries. But numerous as are these enemies, there is one much more formidable that causes a destructive rot that is even beyond the capability of the insect; though they be in countless myriads; and this dread enemy is nothing else than water, when it is too abundant. The injury done by insects is partial; but that caused by the other is under certain circumstances, the almost total destruction of the fruit. In the first place, when much rain falls during the time when the vine is in bloom, it occasions what is called in French, "coulure," that is, the flower is blighted by the pollen of the stamina being washed away which prevents the impregnation of the fruit. It is very difficult to find an effectual remedy for this, practicable on a large scale. The temporary covering of the vine will do much, and the ringing of a branch of it will sometimes have the desired effect by hastening the blossoming of the branch thus operated on.[5] The rot always takes place when, after a long drought, a great glut of rain happens; and this is very frequently the case from the nature of our seasons. We have generally a long and severe drought in the beginning of summer, and this is most usually followed by very abundant rains. The vine, which has been allowed to retain its superficial roots, and has not therefore attained as much depth with its other roots as it would otherwise have done, has been, during the drought, but scantily supplied with moisture by its roots, the upper ones being roasted by the sun and drying wind, and the lower ones not only are not deep enough, but they are also too feeble and inadequate to a full supply; and if the plant has not suffered much during that time, its luxuriance had been checked. The upper roots are very dry and thirsty, and when the rainy season comes, they furnish the vine with such an abundance of water, that the fruit is filled with too crude a juice and it rots.[6] That this is the case is evident from the rot always appearing extensively, invariably under such circumstances, and that vines so situated as not to be exposed to take in too much water, seldom or never rot. The vines planted in paved yards in towns where the rains that descend so plentifully run off and do not sink in the earth, but in a comparatively slight degree, are seldom, if ever, affected by the rot. Such as are growing in small gardens in towns, where they are surrounded by houses and streets, by which most of the rain that falls runs off, are in proportion to these circumstances exempt from the rot. Vines planted deep and whose surface roots are yearly suppressed, do not suffer so much from the drought; for they are supplied from a depth unaffected by the drought, and in the rainy season, the water from the clouds reached their roots slowly and gradually, and the bad effects produced in other circumstances are not as much weakened. The observation of another fact tends greatly to corroborate this view of the case. When vines that are of a bearing

5. Girdling, or stripping the bark around the girth of a branch in a ring.

6. This surmise incorrectly posits an environmentally triggered breakdown of the grape vine's constitution. Rot is produced by spores of a fungus germinating on the damp surface of a vine in warm temperatures.

age are transplanted, they usually bear some fruit the first year, if they have been planted with any care at all. The grapes produced under these circumstances are seldom, if ever, affected by the rot. The cause is evidently this, that though the vines are dug and planted ever so carefully, they have nevertheless lost much of the roots, particularly the small ones which are at the mouths of the plant by which the moisture is chiefly supplied to it. I say chiefly, because the leaves also furnish a considerable supply. Now the leaves also of a vine thus circumstanced are greatly less numerous than usually. The supply of moisture in these cases is very considerably diminished, and the fruit is therefore not affected by the rot.

It appears to me, Sir, that the above reasons are sufficient to defend the practice of deep planting, and that if, in this, I err, I do so in the company with the best authorities on the subject, and not without having, at least, some plausible reasons to advance in my defence. That men differ in opinions and even as to matters of fact, is, I conceive, an advantage; for discussions lead to truth, and the attainment of this is certainly my sole object. It may be thought by many that this subject is uninteresting; but to such as may think so, I will ask if Mr. Geiger's last crop of six thousand five hundred gallons of wine, the product of very poor, in other objects, unproductive lands, does not show it to be a matter of the utmost importance in every point of view, moral, political, economical and pecuniary.

If you think, Mr. Editor, that the above is worthy of a place in your valuable periodical, I beg you will insert it as early as convenient; for I have delayed it too long, and, I assure you, my zeal for this object has rather increased with my years, and I still think that the culture of the vine in these Southern States will prove a blessing to them, and that the sooner such an object is attained the better.

I am, very respectfully, Sir, your obedient servant.

N. HERBEMONT

Letter to Edmund Ruffin

On the Propagation and Culture of the Vine.

November 18, 1833

Publication of *An Essay on Calcareous Manures*, a landmark tract of American agronomy, launched its author, Edmund Ruffin of Virginia, into international celebrity. An agricultural reformer and cultural campaigner with the will of a rottweiler, Ruffin used his celebrity to publish an organ that could serve as a platform for his views, the *Farmers' Register*. Ruffin contacted Herbemont for a contribution. After publishing his two-part treatise "Wine-Making" in the *American Farmer*, Herbemont felt that he had said all he had to say about viticulture to the readerships of the two journals with which he corresponded. He began publishing his series of essays on agrarian topics collected in part 4 of this volume. Commencement of the *Farmers' Register*, however, opened up a new readership to Herbemont, one based in Virginia. His letter of November 18, 1833, supplied encouragement to Virginians who would attempt the troublesome arts of growing grapes and making wine. In this letter he offered his final assessment of one aspect of vine culture, grafting, in which he had been the pioneer. Published in *Farmers' Register* 1, no. 8 (January 1834), 493–95.

Columbia, S.C. Nov. 18th, 1833

To the Editor of the Farmers' Register.

As the climate and soil of Virginia are certainly well adapted to the culture of the grape, both for the table and for wine, we have every reason to hope that some day or other, this state, as also those adjacent, will furnish abundant crops of this most valuable production. Whether the time for such a benefit be near at hand, or very remote, necessarily depends on the exertions that are made to promote it. The great advantages to be expected from successful results in that culture, in every respect—moral, physical, political, and even religious—induce me to propose to you the publication of the following observation on one of the modes (by grafting) of obtaining, in a comparatively short time, extensive vineyards in bearing. So much has been of late years published on the culture of the vine, according to various plans, and also on grafting it, that it is not without some considerable hesitation

that I propose to you the publication of this. I am satisfied, however, that what is true and good cannot be too often repeated, at least until it be generally known and adopted. If, not withstanding this opinion of mine, you think differently, you are at perfect liberty to throw it by.

Whatever method we adopt of propagating the vine, there are some general principles which ought never to be overlooked. If by cuttings, these should be selected of well ripened wood, and about eighteen or more inches in length, planted somewhat sloping, leaving only one or two buds out of the ground. Although I admit that, generally speaking, a plant raised from a cutting, and never removed from the place where it was first planted, is likely perhaps to make a better and more durable vine; yet this mode is liable to so many disadvantages, that I give the unhesitating preference to planting the cuttings in a nursery, to be removed when two, three, or four years old, to their permanent situation.[1] So many cuttings fail, that when a vineyard is attempted by planting them to remain, it requires several years to fill up the vacant places, which renders the plants in the same vineyard very uneven in size and age, and the large ones always dispute successfully the possession of the ground with the smaller and younger. By planting them in a nursery, they need not be put so deep; and by planting them more sloping, they may very easily be taken up without injury to the roots, and if they are transplanted with care, not two in the hundred will be lost. Rooted plants, then, render a vineyard much more even and regular than when planted with cuttings, one half of which, and often a much greater proportion, will die.

One mode of propagating the vine is often resorted to, and, when circumstances will admit of it, is highly advantageous; for by it you may convert in one season, the native vines, males or females, or a vineyard of unsuitable grapes, into such a one as you may desire, if you have scions or cuttings of the kinds you prefer. This mode is grafting. Although the manner of performing this operation is pretty generally known and practiced for all sorts of fruit trees; yet many persons, who never have performed it, may be at a loss how to proceed. It is also proper to notice here, that of all the different methods used for grafting fruit trees, only two or three of them can be used with facility and success for the vine; for, although it may be grafted probably according to every method used for common fruit trees, yet, so far as I have tried it, all the methods but two require great attention and very particular care, which do not always insure success; whereas, the two methods alluded to very seldom fail, even with the most ordinary skill or care in the performance. As an example, I will notice the most common way of grafting ordinary fruit trees, by cleft grafting above the ground. Every body knows that by cutting off the top of a

1. Expansion of Palmyra to a plantation of from eight to ten thousand vines in the early 1830s had made Herbemont rethink the process of planting. The resort to a nursery enhanced the uniformity of growth that is the desideratum of all larger-scale vineyards.

young tree, or the branches of a larger one, splitting it with a knife, and inserting in it a short scion cut at the lower end in the form of a wedge, putting it down on one side, so that the inner bark of the stock and that of the graft, meet and coincide, tying it and covering it with prepared clay or a plaster of a suitable composition, such a graft will usually grow and do well with the ordinary precautions used in such cases. But let vines be grafted in this manner, unless the operator knows the particular requisite for the vine, and the probability is, that he will scarcely succeed once in five hundred trials. The secret in this case is, to split the vine used as the stock, as far down below one bud as may be necessary for the wedge of the scion to be inserted below the bud, and tying it there, taking care not to cut off the fork-like end thus left an inch or two open above the split bud, and between which the scion stands with one or two buds. The whole then being covered, *secundum artem*, with prepared clay, &c. will probably grow. Now, as this method of grafting the vine has no advantage over the most easy one which I shall describe below, except when one wishes to have several kinds of grapes on the same vine; but, on the contrary, is much more difficult to perform, and much less sure; it is only suited for particular cases and experiments. The mode of grafting which I practice usually, and which is attended with no difficulty and very seldom fails, is as follows: If the vine I wish to graft in, is in the place I desire to have it, all I do is to take away the earth round it to the depth of four or five inches, saw it off (or cut it off with a sharp knife, according to its size) about two or three inches below the surface of the ground. (This depth may be regulated by the length of the scion used.) Split it with a knife or chisel; and having tapered the lower end of the scion in the shape of a wedge, insert it in the cleft stock, so as to make the bark of both coincide, (which is perhaps not necessary with the vine—) tie it with any kind of string, merely to keep the scion in its place; return the earth to its place, so as to leave only one bud of the graft above the ground, and the other just below the surface, and it is done. If I have no vine where I wish to have one, I dig it out of the woods, &c. &c.; cut it off as above described; insert the scion; tie it and plant it where wanted, leaving, as in the other case, only one bud or two above the ground. All the care that it now requires, is to surround it with sticks, to prevent its being trampled upon, or otherwise injured, and to notice the shoots that may grow below the graft, that they may be immediately taken off close to the stock, taking care in so doing, not to move the scion or graft, which might prevent its taking. Such grafts usually grow as soon as the other buds of the vines in its neighborhood; but it sometimes happens they are much later; and I have had some that did not push till about June—even as late as the middle of that month. These, however, did very well, and grew very rapidly; and I remember one in particular, that, although it had not begun to push before June, grew afterwards so vigorously, as to cover, nearly all over, an arbor of more than twelve feet square. The stock on which this had been grafted, was a native vine, and a large one, so that the whole force of its extensive roots was thrown into

the graft. I do not recollect now, to a certainty, whether this graft had been made according to the last described method, or according to the following, which is the other of the two I promised to described and recommend. When the stock, or the vine into which you wish to insert a graft, is too large to be conveniently split as in the last mode of grafting, as when they are several inches in diameter, after having sawed it two or three inches below the surface of the ground, nearly horizontally, I take a gimlet, or (which is best) a carpenter's stock and taper-bit, and bore one or more holes, according to the size of the stock, about an inch and a quarter deep. I then prepare the scion, (which in this case ought to be selected pretty large,) and by cutting the bark and a little of the wood all round, within an inch and a quarter of the lower end, fit it to the hole and push it in till the shoulder of bark made by the cutting, as here above described, comes down to the sawed surface of the stock; and if the stock is large enough to require two or three grafts, after having fitted them all in, I return the earth, leaving only one or two buds at most above the ground, as above, and the grafting is done. As this last method of grafting usually succeeds as well as the first, it would seem to indicate that it is not necessary in grafting the vine, as it most undoubtedly is for all other fruit trees, that the bark of the stock, and that of the scion or graft meet and coincide exactly; for in the latter case, the scions are inserted in any part of the stock.

All that remains now to be attended to is, as to the best season for grafting the vine, and the best manner of keeping the scions until that time. I have generally succeeded best when I have grafted late in the spring, and just before the buds of the vine burst into leaves; that is, when the sap is flowing pretty freely. It is however, a matter of some importance, that the scions should have been kept back, if possible, so that their buds are only beginning to swell, and this must regulate the time of grafting. The scions may be kept back, and their vegetating retarded, by burying them in as cold a place as can conveniently be found—such as the north side of a hill or a house, fence, &c.; in short, where the ice and snow remain the longest. A small trench, a few inches deep, is made—the scions laid flat down in the bottom, and entirely covered. I think a better way still, (one, however, which I never had the opportunity of trying,) would be, to put them in a box of sand somewhat moistened, and deposit the box in an ice-house. The scions being thus kept back, may be used for grafting with complete success, so late as when the vine for the stock is in full leaves. I have thus grafted vines sent me by mail from the north as late as June, and they grew well. I should always prefer, however, to do it earlier, where it can conveniently be done.

It is evident that by using the above means, the nature and quality of a vine, or of a vineyard, can speedily be altered; for many of the grafts bear fruit the first year, and certainly, except in case of accidents such as may affect all vines, the second year.

I am not aware that I have here omitted any thing of material importance as to the best manner of grafting the vine with success; and I wish it may be fully tried, and the full benefits enjoyed by all who will take the little trouble the operation requires.

N. HERBEMONT

P.S. From the experience I have of grafting the vine, according to any of the modes here recommended, it may not be useless to repeat one condition which is very necessary to be kept in mind to insure success, viz: That the operation be performed as late as practicable, and only when the buds of the scions have begun to swell, and that these should be kept back by being buried, or otherwise kept in as cold a place as can well be selected. It does not matter that the stock is more advanced; for if the buds had hardly pushed, and had leaves fully expanded, provided the buds of the scion or graft be not more forward than the beginning of the swelling of the buds, the grafts will most generally succeed. As to the mode by boring, it may be only necessary to remark, that I never gave it the preference, except when the stock was too large to be conveniently cleft; and that in boring, it is well to use a bit or other instrument that cuts as smoothly as possible; for a dull or rusty gimlet makes, in green wood, a very ragged hole. Care ought also be had that the shoulder left to the scion, after having fitted it to the hole, comes down to the sawed and smoothed face of the stock. With these precautions, I have very seldom failed; and many of my acquaintances have likewise generally succeeded, though failures by this method is rather more frequent then by the cleft. I do not even think it necessary to cover the stumps and lower part of the graft, as I have formerly recommended, with prepared clay; but merely to return the earth to its place, and raise it so as to form a small hillock, according to the height of the bud, which should be at least half an inch above the ground; for the cut-worm is very fond of eating the young shoot as it begins to grow. The earth should be pressed gently all round the graft. It may be well to observe that scions for hole grafting, should be selected of the ripest wood, and with as small a pith as possible.

N.H.

On the Causes of Failure in Vine Culture and Wine Making.

November 15, 1834

In his second letter to Edmund Ruffin, Herbemont made a statement of faith about the efficacy of large-scale systematic experimentation in overcoming the problems that hinder grape cultivation. He indicated that the regions encompassed by the United States are so various and their climatic conditions so variable that much work remained to be done to determine which vine types were suited to which place. He chided persons who hastily concluded that European wine varieties could not be cultivated in the United States. He held out hope for the viability of French-native hybrids as a solution to growing good wine grapes in difficult regions, although noting hybridization itself requires a great deal of experimental effort securing offspring that do not replicate the weaknesses of parent stocks. Despite the disinclinations of legislatures to support grape agriculture, Herbemont retained his hope of their subvention of experiments that needed to be performed. Herbemont here allowed himself to imagine the work being forwarded by a network of wealthy individuals engaged in private experiments linked by the agricultural journals. Published in *Farmers' Register* 2, no. 8 (January 1835), 478–80.

Columbia, S.C., November 15th, 1834

To the Editor of the *Farmers' Register*.

In the No. for the present month of the *Farmers' Register*, you request that light may be afforded on the causes that have hitherto operated against a complete success in the culture of the vine, in an extended or more general way; for, as you truly say, 'the best proof has not yet been furnished by the successful and profitable general results of the labors of any one individual.' As you honor me especially with this request, I must do my best efforts to do what seems to me very difficult, after the many disappointments which I have myself suffered, and witness in others. Great, however, as these disappointments have been, they have chiefly been so as compared with our unreasonable expectation; but not so as to deter the well wisher to so good a cause, from persevering in his efforts. It is true that, as you say,

'there is no doubt as to our being able to raise delicious grapes, and sometimes abundant crops of them—and also that from them excellent wine has often been made.'[1] Wherever good grapes can be raised, it is indisputable that wine can be made, and its quality will depend on the soil, culture, kinds of grape, and particularly on the skill of the person that makes it. Although little has, as yet, been made for sale in this country, some has been sent to a considerable distance, which was so well relished as to induce an order for a quantity three times greater than the first sent, and the order has been complied with. Besides this, several gentlemen have been now for some years in the practice of making wine fully sufficient for the consumption of their household. All this is worthy of attention—but yet we cannot deny that it has not yet been made a profitable object of culture, and the causes of failure are probably many, and one in particular, impossible to correct: I mean the irregularity of our climate. Among the others may be reckoned, that the experiments hitherto made have been on too large a scale, which precluded the multiplying of them as much as they should have been. I know a gentleman who, before he had any experience, began with twenty to thirty acres, and he has now about fifty or more acres in cultivation.[2] Experiments on such a subject are very expensive, on account of the length of the time required to complete them, by which the patience of the experimenter is often exhausted before he could have calculated on a result; but, if the trial has been made on a large scale, the expense attending it may also have frequently warned the imprudent, though patriotic zealot, that by seeking thus for wine, he may lose his bread.

In order to have reasonable hopes of success in such an enterprise every point of difficulty is to be considered; and in a country where such a culture is first attempted, the points to be ascertained are many—first, as to soil, exposition, and climate. It is very evident, that a satisfactory result to this inquiry cannot be obtained before the experiment has been carried on in various sites, soils, and expositions, and at considerable distances from each other. The particular kinds of grapes suitable for the different soils and situations, is also a subject of no trifling difficulties, and the solving of them requires, of course, many and very carefully made experiments. The effect of the insufficiency of experiments on this particular subject, has been a hasty conclusion, that foreign grapes will not do in this country, thereby discarding at one fell sweep, a whole, and probably the best families of the vine, from which success should have reasonably been expected. I do not intend, by this, to intimate that we cannot hope for success from our native vines; for I believe that many are very valuable—and especially, great expectations may be

1. Editorial remarks, *Farmers' Register* 2, no. 6 (November 1833).

2. Abraham Geiger. This passage explains the reasons why Herbemont never projected expanding Palmyra beyond sixteen acres of vines. The risk of large-scale failure was too great.

formed from vines raised from the seed of native vines, impregnated with good foreign ones: but the fault usually found with the imported vines, is also frequently found (in unsuitable situations) with some of the native ones; some of which will rot, decay, or otherwise fail in the same manner as those imported. By thus rejecting, without sufficient cause, all the imported vines, we give up the chance of producing those fine and elegant wines, for which foreign countries, and particularly Europe, are so celebrated. To take a detailed view of these numerous experiments, is almost certain to produce an abandonment of the difficult task; for each of them requires many years to afford a satisfactory result, and several of the trials can only be made one after the other. It seems to follow, from all this, that these experiments are above the means and perseverance of men in their individual capacities, unless possessed of great wealth, and an unchangeable determination to follow them on to a successful termination. I have long come to the conclusion, that experiments of this nature should be undertaken at the expense, and under the protection of government, or of large and wealthy patriotic associations, capable and willing to pay competent men to carry them on in the various soils and situations of the country; and, with sufficient means, they (or most of them) may be undertaken simultaneously, by which, time and expense would be greatly economized. First ascertain that a particular culture is desirable and its advantages great, (and those from the culture of the vine are incalculable, in moral, political, and financial points of view,) and, after this, why hesitate to adopt adequate means of success?

I know it will be said, that it is contrary to the spirit of our governments and institutions, to undertake any thing of this sort at the public expense, and that the enterprise of individuals will soon effect it, if it promises profit to them. It appears to me, that the expense and care of an enterprise should be incurred by those who are to derive the advantages—and the country is to derive them; for is it not a public benefit, that the citizens should be temperate, industrious, moral, and the country itself increase in a denser and happy population? It cannot be doubted at this day, that drunkenness is comparatively unknown in wine countries, and that the cottage of the vine cultivator is the abode of industry—therefore of honesty and happiness; that each individual can cultivate only a limited extent of vineyard, hence a dense population is the necessary consequence. Is there any thing more desirable in any country, and particularly in our middle and southern Atlantic States than a numerous population of honest, industrious and sober people? If it be not one of the principal duties of governments to aim at producing such a state of things, in the name of common sense, what were they instituted for? Were they formed merely to pilfer, worry, vex, render criminal, and punish poor simple man? If such be their objects, give me anarchy and the savage state.

Taking things as they are, however, may we not succeed in some degree in cultivating the vine to advantage? Time and perseverance will undoubtedly effect what

might have been done by more sure and speedy means; and let us endeavor to correct our errors and proceed as well as we may in our circumstances. On examining carefully this fruitful subject, we find that, in some localities, several of the varieties of the vine which have been cultivated here, not only succeed well, but very seldom fail of producing a plentiful crop. Whether this be due to soil, exposition, or other cause, we ought to be satisfied that whatever may be, and is actually done on a small scale, cannot be absolutely impossible on any scale, soil, &c., being suitable. As for the cost necessary to obtain such a result, (if it can be obtained by any means in our power,) if success could be once tolerably certain, it would be of no consequence; for what could be too expensive that would produce from $500 to $1,500 per acre? We must next consider whether the object is worthy of the effort. Not taking now in the account the great and public advantages, or the possible great pecuniary profits, merely hinted at above, some of the individual advantages may be detailed. A farmer, a country gentleman, or even one residing in a town as a professional man, or a man of wealth retired from business, may cultivate, in his leisure moments, by himself and his house servants, from one-eighth of an acre to one or two acres of vines, according to his means, his industry and his zeal; and from this source of healthful, interesting, and most innocent amusement, he will obtain in usual seasons, a most abundant supply of a wholesome beverage, a wine which he will know to be pure and unadulterated. He will be able to make at least two kinds of wine from the same grapes, and gradually improve in the qualities of each as he acquires experience in the making of them. These wines will excite in him an honest pride in regaling his friends with product of his own industry, and protract and invigorate the health which he will have established by the cultivation of his vines. He will form in his family and domestics, habits of industry, useful exercise, sobriety, and consequent happiness, and his posterity will bless his memory.[3]

As you seem disposed, Mr. Editor, to republish one or more pieces of mine, formerly published in the *American Farmer*, it may not be unnecessary to say a word concerning the discrepancies that seem to exist between my present observations and some in former pieces. Not that I care for what is usually understood by consistency, for I sincerely wish to be only consistent in my attempt at stating the truth, and in doing whatever little good I may have in my power. It will be found in some of my former writings, that I reject the idea of any very great difficulty attending the culture of the vine; and, notwithstanding all that I may have said above, I still say the same thing. The knowledge of the thing, trifling though it may be, must be had; but having the proper kind of vines planted in a suitable soil,

3. This vision of the personal satisfactions of wine making stands as the positive good that outweighs all of the travails involved in taking up the culture.

the difficulties all vanish, or none remain but such as any man with a little practice and a common understanding can usually overcome.

The instability of our climate is undoubtedly a great obstacle to our cultivating the vine in this country, in any situation indiscriminately. The last season is a very striking example of this. We had here, frost as late as the 17th of May,—much later than I had ever known it. The weather continued sometime longer; and when the temperature changed, it rose at once, or rather in the course of a few days, to almost the highest degree to which it usually rises in the hotter parts of our summer. Although that very late frost was not, in many places, sufficiently severe to kill the young shoots of the vine, yet it must have checked vegetation very greatly; and it seemed to me to have produced a sort of paralysis, if plants are ever subject to such a disease. The quantity of fruit thrown out by the vines was very great, and there never was a prospect of a greater crop. It seems, however, that the vigor of the vines was insufficient to nourish the fruit; and this high degree of temperature producing a great exhaustion of moisture from them, greater than their capability to sustain the due equilibrium, the grapes withered and perished in a shorter time, and to an extent never known to me before. We have usually, in the first great heat in June, a period of rot or decay like this; but never so destructive, and always leaving a quantity sufficient to have such a second period of rot, and still leave enough for a tolerably good crop. I have several times, I may say, ordinarily, after two such periods, obtained from my vines in my garden, at the rate of from one thousand to one thousand five hundred gallons of wine per acre, on about the sixth part of an acre. The vines at my farm being much more exposed and in still more sandy soil, have never done as well as this; but it is an undoubted fact that the wine produced from the more sandy and poorer soil of my farm is of a superior quality to that made from my garden.

It is worthy of notice, that wherever vines are protected by houses, &c., they are proportionably free from the effects of these periods of rot or decay. Situations, therefore, sheltered by mountains, hills, &c., are likely to prove the most advantageous for the vine, particularly where the soil contains calcareous matter, or is otherwise suited.

How far these views of mine may be correct, it is very difficult to say; for, I have had generally, very strong reasons for attributing the rot to the great rains which we usually have in the latter part of June, after a long and severe drought. The operations of nature require a very close and accurate observer, who has time, and knowledge to bring to his assistance, or else the results of his observations will scarcely be any thing but a chapter of contradictions.

You ask me, sir, what is the origin of that vine which is called "Herbemont's Madeira." It is a vine which I found cultivated by the name of "Madeira" in this place when I first came to it. I had for a long time, reasons to believe it a native vine; but a gentleman of Georgia, to whom the culture of the vine is very greatly indebted

(Mr. Thomas McCall,) assures me that he knew it to have been imported from France.[4] It is so vigorous in its growth, so well inured to the climate; besides which, I had received it several times from different quarters as a native, that I was warranted in my supposition; but I have no doubt now of its being an imported one.

N. HERBEMONT

4. McCall was wrong about this.

Origin of "Herbemont's Madeira" Grape.

February 1835

By 1833 Herbemont had allowed himself to become persuaded by the "grape lore" of Thomas McCall that the Herbemont grape had its origins in Europe. His observations told him that the American form of the grape had departed greatly from the European progenitor—whether through mutation, sporting, or the chance adaptation of a seed to the New World environment. But McCall was trading in hearsay. One ancestor of the American hybrid came from Europe, but it is doubtful that even current flavonoid analysis could unravel the grape's genealogy beyond its current designation as a cross between *Vitis aestivalis*, *cinarea*, and *vinifera*. Published in *Farmers' Register* 2, no. 10 (February 1835), 591.

To the Editor of the Farmer's Register.

Since I wrote to answer your inquiry, I have learned a little more concerning the origin of the vine called "Herbemont's Madeira." It certainly has been received from France, under different names, and also from Madeira. It is most undoubtedly one of the most esteemed families of vines in Europe. In certain situations in this country, Charleston for example, it does most admirably well. It has been received from France by the names of "Muscat gris,"[1] "Pineau,"[2] and "Maurillon."[3] I have not yet been able to learn by what name it has been received from Madeira. It changes some of its character so much in this country, as scarcely to be known again—for here it grows to the size and vigor of our strongest native vines. The nomenclature of the vines is, in Europe, in such a chaotic state, that it would take the labors of at least twenty Hercules to clear it up. Now that this culture is fairly begun in this country, we should be very particular with our names; and confusion in nomenclature is frequently inextricable, at the same time that it is exceed-

1. An Alsatian variety still used in grand cru wines from that region.
2. Pinot Gris.
3. Austrian name for Chardonnay. Herbemont's point about the chaos of nomenclature in Europe is born out by the application of the names of three different varieties to his Madeira.

ingly disadvantageous to the cultivators. The names should be short, if possible, and unchanged after they have been adopted. I would suggest, for example, that the excellent kinds introduced by the names of "Norton's Virginia Seedling,"[4] and "Cunningham's Prince Edward," be simplified, by suppressing every thing but the names of the gentlemen entitled to the honor of naming them.

N. HERBEMONT

4. This recommendation was followed. The grape is now known simply as Norton.

Difference of the Growth, Culture, and Product of Grape Vines, in the United States and in Europe.

April 29, 1836

Herbemont's fundamental observation about vine culture was that it differed in the United States from that of France. An encounter with James Busby's *Journal of a Recent Visit to the Principal Vineyards of Spain and France* reminded him of the extent of that difference. In the first letter of this pair of communications to Edmund Ruffin, Herbemont puzzled over the extraordinary vitality of the Herbemont Madeira vine contrasted with certain *Vitis vinifera* vines he had seen in Europe that were growing in his plot at Palmyra. These letters also reveal the inveterate inclination to experiment that Herbemont possessed. Despite his chronic illness, he was growing mulberries and osage orange with an eye to silk culture. Having espoused silk culture since 1822, Herbemont early in the 1830s determined to try it, and so anticipated the agricultural craze for raising silkworms that seized the country later in the decade. Published in *Farmers' Register* 4, no. 2 (June 1836), 89–91.

Letter I

Columbia, S.C., April 29th, 1836

To the Editor of the Farmer's Register.

If you think the following is sufficiently interesting to fill a page of your excellent periodical, have the goodness to honor it by giving it room.

The comparing of the various objects of agriculture in different countries may lead to reflection and elicit improvements in the culture and mode of management. I was led to think on this subject by reading a very good book—"Journal of a recent visit to the principal vineyards of Spain and France &c., by James Busby,

Esq."—[1] This gentleman has visited those countries like a man of sense, and his observations are usually correct, as his descriptions of men and things are worthy of utmost confidence. He has visited countries and persons which I knew well, and it gave me great pleasure to see him mention so truly, gentlemen who deserve all the praise he justly bestows on them. It also gives me great pleasure to have this opportunity to notice here in support of Mr. Busby's high character of Mr. Delisle,[2] Professor of Botany, and Director of the *Jardin des Plantes* at Montpellier. This gentleman's urbanity and liberality to strangers are above all praise, and I have experienced both. Mr. Busby notices the very small size of the vines in Burgundy, Champagne, and elsewhere, and their being planted, frequently as near as from 15 to 20 inches apart, and even closer in some instances. This I knew perfectly well; but it nevertheless seems very strange when compared with the growth and large size of our vines in this country, even in very poor sandy soil. To show this more satisfactorily, I shall here give a rough description of the vines in my garden. My grape-vines, which I use chiefly for wine, cover one sixth part of an acre. They are 45 in number, viz. 37 of my Madeira, 6 of the Lenoir, and 2 of the Bland, all made into wine separately.[3] They are trained so as to cover the flat top of a trellis 8 feet from the ground, and they very fully cover it, none of the foliage or fruit being allowed to grow below the top of the frame. The oldest of these vines were planted as cuttings 27 years ago,[4] and some of them are very large. The largest of them covers almost entirely a space of 48 feet by 30 feet. Just above the ground it divides into 5 branches of the following respective dimensions in circumference: 11 inches, 8½, 8, 7½ and 7½ inches. This is of the kind known as Herbemont's Madeira, and is, most undoubtedly, an European vine.[5] It is, by some persons in Charleston, called Burgundy grape, and is one of the principal vines cultivated in the French province of this name, as also in Champagne, &c. I think it is there called Pineau or Morillon, and is the greatest bearer I ever have seen, and its fruit is equaled by few, and surpassed by still fewer, as a delicious grape for the table as well as for wine. This, then, is one of the vines, which, in those provinces are planted as near as 15 or 20 inches from each other! What can cause this enormous difference in the growth

1. *Journal of a recent visit to the principal vineyards of Spain and France: Giving a minute account of the different methods pursued in the cultivation of the vine and the manufacture of wine: With a catalogue of the different varieties of grape: An attempt to calculate the profits of cultivating the vine: An estimate of the profits of Malaga fruits* (New York: C. S. Francis, 1835).

2. Guillaume Delisle.

3. Because chronic indisposition made travel difficult and because of an experiment in corn culture on waste lands, Herbemont suspended his wine-making operations at Palmyra for a year and a half, concentrating his waning strength on his vineyard in the center of Columbia.

4. In November 1809.

5. The configuration of the leaves in particular is reminiscent of *Vitis vinifera*, but Herbemont is only partially correct. The grape is a European-native hybrid.

of the same plant? It cannot be richness of soil; for in parts of France and Spain their vineyards are highly manured, and grow in a more genial soil, being highly calcareous.[6] My soil is very light and sandy, and although the vines alluded to, as growing in my garden, are occasionally manured, yet it is by no means very rich; and at my farm, where the vines have only been manured at the time of planting them, and the soil there is very poor and sandy, they grow nearly as large as in my garden. I have noticed strangers sometimes look at the soil and vines alternately, in the utmost surprise, not being able to realize in their minds, such a growth on such a soil. This is most certainly very strange, and we can scarcely conceive that such must be the sole effect of climate. Can it be really the effect of climate, or is there some other cause that we have not yet found out? It could not well be attributed to the mode of culture and training; for my first efforts were to cultivate and train the vine low as is done in France, allowing them more space, however, than is done there, for I expected a larger growth on account of the climate. I soon found it impossible to keep them down, for when they were from 6 to 12 years old, they would put out shoots in one summer 20 or 30 feet long, or even more. I was, therefore, obliged gradually to adopt my present mode of training. What can be the cause or causes of this enormous difference in the growth of the same plant? It must also be noticed there are several other kinds of French vines, particularly the white grapes, that never assume this great luxuriance.[7] I have another, which is also said to be a Burgundy grape by persons who know to a certainty of its having been imported from France. This vine was called by a French gentleman, many years since, the "giant vine," on account of the great vigor of its growth. It makes a very good red wine; but I do not cultivate it much, because it is exceedingly liable to rot, much more so than my Madeira; though both are said to do well in the low part of this State, principally in Charleston and Beaufort.[8] If it really be so, I am much surprised that some one does not cultivate it on a large scale for wine; for its produce would there surpass any after production in profitableness, reaching, or even exceeding, 2000 gallons of wine per acre.

Now to compare the product of our gigantic vines with the dwarfish ones of France. Their crops seldom exceed 300 or 400 gallons per acre, very rarely, though sometimes reaching, however, to 1000 gallons. My vines rot much every summer, sometimes more, sometimes less, according to the season. The last was most unfavorable, and at least two-thirds of the grapes were lost by the rot. The remaining

6. Since 1832, Herbemont believed Edmund Ruffin's doctrine that calcareous manures—marl, powdered limestone, ground calcite—were the most efficacious way of enriching poor soils.

7. In the early 1830s, Herbemont had approximately sixty different varieties of grape growing in experimental plots at Palmyra, numbers of which were true *Vitis vinefera* vines. Their disinclination to grow extensively should have suggested to Herbemont that his Madeira and Lenoir varieties were not from a low and slow-growing European species.

8. Pinot Noir does suffer greatly from black rot and Pierce's disease in the South.

ones grow probably the larger for it, as the latter part of the season was very favorable. Now, notwithstanding all this loss by rot, I made from that sixth part of an acre in my garden 230 gallons of wine, which multiplied by 6 gives 1380 gallons as the produce of an acre similarly situated.[9] The culture of the vine in this country is a most interesting subject, that deserves to be followed up with zeal by wealthy public spirited gentlemen, or more properly by public aid.

I had intended, sir, to give you the dimensions of several other of my vines; but my paper is so nearly filled up, that I have only room enough to tell you that I have tested the truth of the article in the last No. of the *Farmers' Register* relative to the *maclura aurantiaca* (osage orange.)[10] Silk-worms really feed freely on its leaves, and I have grafted it on the Chinese paper mulberry, (*Brousonetia,*) and roots of the common mulberry, with apparent full success. My good friend, T. S. P. having sent me seeds of this valuable tree.[11] I planted them, and I have at least one hundred of them coming up finely. This is also a very interesting subject, which deserves the attention of the lover of his country.

N. HERBEMONT

Letter II

The subject of *provignage* requires some explanation for those persons who are not acquainted with the culture of the vine in France. *Provignage* is usually nothing more than the practice known to all gardeners of laying a branch of a plant for the purpose of making it take root, and thus multiplying the subject.[12] This word has, however, besides this, another, though analogous meaning, among the cultivators of the vine in Europe, and principally in Burgundy and Champagne. By it is also understood the singular and strange operation of laying down in a trench, not only the whole vine, but all the vines of a vineyard, leaving only the summits out of the earth. The object of this is to renew the vines without losing time, as the vines bear a crop the same year that the operation is performed. By this operation, all the vines of a vineyard will, after a number of years, be very far from the place where they were originally planted. I called this a strange operation; for, where a plant is in a soil and climate fully suited to its perfect success, this can-

9. Implicit here is Herbemont's ruthless culling of his crop. One reason his wine was so superior to the usual product in America was his vigilance in seeing that no diseased or unripened fruit got into the crush.

10. In the late 1820s the osage orange became an object of interest among southern farmers both as a hedging plant and for the reasons specified here. George J. C. Clarke of St. Augustine extolled its virtues repeatedly in the agricultural press and piqued Herbemont's interest.

11. Thomas S. Pleasants of Petersburg, Virginia, a pomologist and mutual friend of Ruffin and Herbemont.

12. Heretofore called "layering" in Herbemont's writings.

not be necessary, particularly for a plant, which like the vine, will live and thrive, in favorable circumstances, for several hundred years. This provignage, or laying of the whole plant, has been practiced time immemorial; but it was only after a considerable number of years, when the vines really needed renewal. But it is now done in some parts of Champagne, as frequently as every three years. This being a very laborious and expensive operation, the advantages of it must have been very fully ascertained. The high prices of the wines produced in that country may warrant this expense; but it certainly would not do for the great bulk of the wine countries in Europe and elsewhere. The vine being there a very diminutive plant, compared with its natural exposition in more southern countries, renders this operation practicable; but it would be impossible with us, except with very few, if any of the least vigorous growers. With us, however, it is not necessary, for I feel confident that most of my vines are capable of living and thriving for several centuries, if suffered to do so. It would be a very wrong idea, to suppose that because our vines here are very extensive and large, that they must look old and decrepid. They are not at all so. They are, on the contrary, most luxuriant and fruitful. It is also proper to observe that their size is no obstacle to their being as closely pruned as the short vines of Europe; for the pruning takes place on the growth of the preceding year; this may be cut as short as convenient or suitable. One of our large vines that covers a very great extent of ground, is, in reality, like a great number of plants of the size of the European ones, issuing from the old wood, instead of out of the ground. If the European writers on the subject are correct in supposing that old vines produce richer grapes than young ones, and that the sap becomes better elaborated by passing through the vessels of old wood, and the leaves of the young, our large vines must have a great advantage over the small ones. I have great doubt of the correctness of this principle; for they also say that the nearer the fruit is to the ground, the richer it is, and the better it ripens. This, although it appears irreconcilable with the other proposition, appears to be a well ascertained fact, that, in the colder parts of Europe, where the vine is cultivated, the grapes produced on arbors, and high-trained vines, are poorer in saccharine matter than those from the low vines of their vineyards. It is probable that the reason of this is, that, on the low vines, the heat reflected from the ground has a greater effect than on the high ones. In our climate, we have heat enough to reach to any height to which we may choose to train our vines.

The very great and praiseworthy industry and ingenuity of our European brothers, in converting a country most evidently very unfavorable for the growth of the vine, into one producing some of the highest priced wines in the world, shows that all we need, to insure success, is perseverance, and a number of experiments to ascertain, not merely the most suitable mode of cultivation, but also the most suitable kinds of vines for our purposes, as to hardiness and richness of fruit. I am now too old to make many more experiments on this most interesting subject; but others

will follow who will probably be more successful. What would most undoubtedly be the very best way, would be to have those numerous experiments which require years to give the results, undertaken at the public expense. I have long labored in the vineyard unaided—but, on the contrary, discouraged by sneers, &c. But yet, if I have not had the most complete success, I have done something, and my labors will not be altogether lost. I shall persevere as long as I am able.

I continue to feed the few silk worms I have with the maclura[13] at the same time as I give them also mulberry leaves, and I find that they feed indiscriminately on either of these plants. If there be any difference, it may be that they prefer the maclura. This subject may become very interesting, particularly if it be found that the latter plant is hardier, and resists late spring frosts better than the mulberry.

N. HERBEMONT

13. Osage orange.

On the Suitableness of Warm Climates for Wine Making.

February 15, 1837

Climate and soil have ever been the two environmental conditions that determine most materially the character of wine. Too much cold, too much rain, or too much heat diminish the possibility of producing a vintage. Having grown up in the north of France, Herbemont knew about the limitations that cold and frost impose on viticulture. Living in the American South, he learned that humidity, not heat, was the great bane of wine making. Here, Herbemont digested the writings of André Julien about the geography of viticulture to show that it is practiced in the tropics in various parts of the world. Published in *Farmers' Register* 5, no. 11 (March 1837).

Columbia, S. C. February 15th, 1837

To the Editor of the Farmers' Register

Dear Sir: I have read with much pleasure in your most valuable *Farmers' Register*, (No. 10) the extracts from "an essay on the climate of the United States," and feel disposed to make a few observations on some parts of it.[1]

I shall not try my hand at explaining the causes why the eastern portions of our continent are much colder than the same parallels of latitude on the western coast of Europe. These, I thought, were matters pretty well settled, so far as we can see into them. The causes of the various winds are more unknown, at least to me, and therefore I shall say nothing about them. The author's views relative to the culture of the vine in the United States, come somewhat more within the narrow limits of my studies and experience. It is but too true that "the efforts made at different periods, and in various parts of the country, to attain this object, have hitherto been so unsuccessful, as to introduce a very general belief, that there is something

1. Ruffin had encountered a copy of the anonymous tract written two decades previously and reprinted extracts in his journal: *An Essay on the climate of the United States, or, An inquiry into the causes of the difference in climate between the Eastern side of the continent of North America and Europe: With practical remarks on the influence of climate on agriculture, and particularly the cultivation of the vine* (Philadelphia: Hopkins & Earle, 1809).

in our soil or climate, so unfriendly to the vine, that it can never be cultivated with success." This unfriendliness, it appears to me, is more in the climate than in the soil; and yet, although climate cannot be corrected by us, the soil can be in some degree, and we might do pretty well, if it were not that much too great quantities of rain fall in this country, during the summer mouths, particularly in the southern states. In a dry summer, we have good grapes and a tolerable crop, which might be very good in a soil sufficiently calcareous. It would be a most strange anomaly, that the vine could not be cultivated in a country which has, perhaps, more than any other on the face of the earth, indigenous vines growing almost every where, and in very great variety. Although we may, among this variety, find several that may be introduced into cultivation with great advantage in the cultivator, yet, I would not that our efforts be limited to the native kinds, alone—for the cultivated ones of Europe and other parts of the earth, offer advantages which never have been yet obtained from the native one. The exotic kinds, many of them grow very well in our country, and even more luxuriantly than in most parts of Europe. It is so true, that for a long time, I attributed the rot in the grapes to that very luxuriance of the vines; but, the having planted some, with equal want of success, in very poor sand land, has much weakened that opinion. I still hope that the remedy, at least a partial one, might be found in calcareous earths.

The author of the pamphlet, whose review I am considering, seems like many other writers on the subject, to think it an insurmountable object to the making of wine, that the grapes ripen in the hot summer months, and thereby, the fermentation going on too violently, the wine becomes acid. I have made wine when the thermometer was 90 deg. and upwards, and my wine has never turned acid in consequence of it.[2] I certainly never have experienced any difficulty on this account. But if a due and moderate degree of fermentation could not be obtained in a temperature so high, still the difficulty would be easily overcome. We surely can obtain a lower temperature by digging a deep cellar for it. This is, it is true, an expensive structure; but it is insignificant when contrasted with the profits of the successful culture of the vine.

The author says: "wine, I believe, is never made within the tropics." Very little is made within the tropics, particularly on the eastern part of the globe, relative to our continent; but, the cause of this, is probably more to be sought in the indolence of the inhabitants of warm climates, and also, in the Mahometan prohibition of the use of wine, than in any absolute difficulty. I have now before me a French book—"Topographie de tous les vignobles connus," &c. "Par A. Julien, auteur du Manuel du Momelier," &c.[3] In this most interesting and excellent work, I find not

2. Herbemont harvested his grapes in August. He usually finished the crush and initial fermentation in the first week of September.

3. Andre Julien, *Topographie de tous les vignobles connus . . . précédée d'une notice sur les vins des anciens et suivie d'une classification générale des vins* (Paris: Published by the author, 1819). Three edi-

only great crops of excellent wines are made in Greece, Egypt, Palestine, and still more southern tracts in Africa and Asia; but, I also find the vine cultivated in Arabia, between the 12th and 30th of latitude. It is also found in Abyssinia, and also in several of the Oases of the great deserts. Grapes are also successfully cultivated, and wine made in some of the West India Islands. In Guiana, "the vine, pomegranate, and the fig tree, are the only fruit trees transported from Europe, which have had success in some parts of the country; but the grapes rot during the rainy season, and are devoured by the insects during the hot weather." The country extends from the 2d to the 9th degree of north latitude. On the western side of the continent, in latitude south, 8 degree and 9 degree, "the province of Truxillo has numerous vineyards in full success." "In the government of Cusco, wines and brandies are one of the principal sources of wealth in the Corregidorship of Callahuas." "In Peru and in the Tucaman, the vine is very successfully cultivated." It is so likewise in many parts of Chili, Mexico, and other southern countries. It is to be observed that, although the wines made in those warm climates are not all of the first quality, yet many are in very high repute, and bear high prices.

From all those facts, we ought to gain courage. We should persevere, and probably, success will finally crown our endeavors. Public aid should certainly be afforded for the purpose of making the many and expensive experiments necessary to insure a prosperous result; for this would redound to the general benefit in morals, as well as pecuniary and political and commercial advantages.

I fear, Mr. Editor, the manner as also the matter of the above rude lucubration, may not accord with the taste of the generality of your readers; but, yet, I think with you, that if our distinguished and talented men, were to turn their thoughts to agricultural improvements, meteorological studies, and the introduction of valuable articles of culture, and less to party squabbles, &c. we would do much better than we do. While I am waiting for this good change in our views and exertions, I continue to be truly yours,

N. HERBEMONT.

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tions had been issued by 1837: 1819, 1822, 1832. Which he owned cannot be determined. Herbemont supplied his own translations.

Grape Culture in South Carolina

September 9, 1837

This last of Herbemont's reports to the agricultural press on the status of his vintages conveyed the essential message of his wine-making experience—that despite the usual obstacles (rot and predation), his wines produced with such abundance that good wine was made despite the losses. In this letter, too, Herbemont supplied evidence which suggests that the illness from which he suffered during his final years was malaria. Published in *Farmers' Register* 5, no. 6 (October 1837), 378–79.

Columbia, South Carolina, Sept. 9th, 1837

To the Editor of the *Farmers' Register*

Dear Sir—Long indisposition, and much occupation in a small way, have prevented my writing to you sooner; and another cause for delay is, that I wished to have it in my power to give you the result of my vintage, which I have this day terminated, except a small quantity of the grapes called "Bland's," which I shall probably gather next week, and which will add 40 or 50 gallons of wine to the amount mentioned below.

The culture of the vine is really a strange thing. It produces an excitement somewhat analogous to gaming, though I hope it is more innocent and useful. The rot attacked the grapes, as usual, about the middle of June and beginning of July, so as to threaten disastrous consequences to the crop. The quantity of grapes was very great; but I do not think much more so than they are commonly. This rot, however, stopped without having inflicted on the vines the devastation to which they are often liable. My vines, particularly those in my garden, attracted much notice and admiration. You will not be surprised at this, when I inform you that I obtained from those vines (in my garden one-sixth of an acre,) 460 gallons of wine. I have every reason to believe that it will be of an excellent quality. When such a great quantity of grapes have attained full maturity, and hang from a flat-top arbor like mine, it is difficult to conceive the beauty and richness of the sight. I almost fear to mention the almost incredible product of two of the vines, which I cannot, however, give with great accuracy, for I did not think of measuring it with the gallon measure till it was too late, when I noticed it in the casks, before the grapes of other

vines had been gathered. It was, certainly upwards of 130 gallons. The largest of those two vines is mentioned in the fourth vol. of the *Farmers' Register*, No. 2, page 89, near the bottom of the page. It is 27 or 28 years old. Take the produce of these two vines, and that of the others in the garden, and I doubt much whether it has ever been excelled in this or in other countries.[1] These vines are principally those called Herbemont's Madeira, and a few of the Lenoir, in all 45 vines.

The product of my poor sand-hill vineyard, is nothing to be compared to the above; but yet, it is greater than it has ever been—740 gallons was the result there.[2] Not having made any thing of a crop at the farm for several years, the vines had been much neglected, most of them indeed, totally so. I have no doubt, that with a little care and culture, they would have produced at least three or four times the quantity. This neglect of the vines was for the purpose of raising more corn, which the poverty of the soil would not, did not, or rather could not yield.

I must, in fairness, state that although the vines in the two arbors in my garden, were planted within a space containing only one-sixth of an acre, taken together, yet the vines extend over head on one side of the larger one about 10 or 12 feet, and those of the other extend the same width on both sides. The part thus covered, however, is in one case taken up by a walk, and, in the other, the ground is cultivated as if it were not thus covered, so that the ground is not in reality taken by the vines. I am also trying the culture of the currant and the gooseberry, (in which I never have succeeded before,) under the vines of the larger arbor. The shade seems to produce the effect I expected from it, and I have had this summer a little of both these nice fruits. I am also trying dwarf pear trees under the same vines, and they have stood the drought and great heat of this summer, although they were planted very late. I think it is almost certain they would have died, but for the protection of the vines. *Nous verrons*.[3]

Although my crop of grapes was great, there was much rot among them, which had to be picked out, which operation was long and tedious. This rot, in the Madeira, was that of the early part of the summer, and the grapes affected by it were dried up. If these had been left, they would not only have imbibed a great deal of the juice of the others, but would most probably have imparted to the wine a bad taste. My other grapes, the Lenoir, had very little or none of the first rot; but as they were attaining their full maturity, they were attacked by a large insect called "June-bug," and "fig-eater." These soon destroy a bunch of grapes, not only

1. In America the most famous productive vine was that of John Willis at Oxford, Maryland, planted in 1808. It remains alive and is a local tourist attraction. The famous Hampton Court vine in England was known to literate Americans in the 1830s.

2. In 1831 Herbemont constructed a rammed-earth processing building at Palmyra in which he worked his vintage from the sand hills. He did not press the wines at Palmyra in 1835 or 1836 because of health issues and his corn experiment, preparing his vintages for those years from garden grapes exclusively.

3. We shall see.

by eating them, but also by tearing the skins, so that with the abundant and long rains we had at that time, they destroyed about one half of a very beautiful crop of grapes. Other insects, as bees, wasps, &c., and birds, even that beautiful little one, the humming bird, assisted the "June-bug" in the work of destruction. I confess I grudged them their feast, except to the lovely little one last mentioned, which did but little mischief. Indeed I was much amused to see how the little fellows sipped the nectar of the grapes, which I never had observed them to do before.

I must also say this much in favor of the culture of the grape—that I was much indisposed before I began to gather them and make them into wine, by which I underwent much fatigue. I did not get quite sick, which I believe I should have been under other circumstances. On the contrary, I considerably improved in health, although there is still much room for further improvement. You will think, perhaps, by my verbosity and garrulity, that I am not now without some fever.[4] Perhaps I am not, but I am certainly under the influence of fatigue. But why should I write all this stuff which can be of no interest to you or the readers of your Register? But I am not going to criticize my own letters, and therefore, I shall here stop writing if I can.

In health, or otherwise, I assure you that I am truly, my dear sir,

Very respectfully,
Your obd't serv't.
N. HERBEMONT

Columbia, S. C. Sept. 12th, 1837

To the Editor of the Farmers' Register.

I regret, my dear sir, to be so troublesome to you, but I beg you will put up with an old man whose head is easily confused, and has had of late a full share of confusion in it.

The object of this is to request you will correct some errors in the amounts of wine as stated in my letter two or three days ago. It appears to me that I have not been as accurate as proper, particularly as when I wrote I had still a small vat to press. I have since measured the casks which I filled, with a gauging rod, the accuracy of which I have repeatedly tested. The following statement is correct, and I beg you will correct by it any difference which may be in that sent a few days since.

I made at my farm called "Palmyra"	750 gals.
At my garden at home,	528
In all,	1278 gals.

4. The complaints of chronic fatigue and fever over several years' duration during the final period of Herbemont's life suggest that he suffered from malaria, a substantial problem in South Carolina among persons often in the field.

That crop from my garden, being only the sixth part of an acre, is enormous, being at the rate of 3168 gallons to the acre. A greater crop than perhaps ever was made any where. At least I never have seen any account of any more than 2000 gallons, which was considered exceedingly great. Mine is a true and correct statement, witnessed by several gentlemen of the first respectability.

As to the product of the two vines mentioned, the most accurate estimate which I can make of it, makes it reach to the incredible amount of upwards of 170 gallons. I must leave to stand 130 gallons to render the statement more credible.

Very respectfully yours,

N. HERBEMONT

[Mr. Herbemont need not fear that any one will suspect a false or designedly delusive statement in any communication subscribed by his name; and therefore, and because the arithmetical corrections he requests could not easily made without altering the language of his first letter, we have thought it best to print both; the second serving to correct any errors of quantity in the first.

The quantity of wine produced by the two vines alone, and by the vines on the two arbors, considered in any point of view, shows an enormous product; and a result which must be highly gratifying and encouraging to all who are prosecuting or design to commence the culture of the vine. But we do not consider that one-sixth of an acre on which the vines stood, is all the land that furnished to them nourishment.—Their roots probably extended considerably beyond the limits of the enclosure; and if not, their branches certainly did, and would have greatly injured the growth of any grain crop planted beneath the shade or cover.—ED. FAR. REG.]

Letter to Sidney Weller on Grape and Silk Culture.

March 8, 1838

Herbemont's correspondent in this last of his published writings, Sidney Weller (1791–1854) of Halifax, North Carolina, exemplified the generation of younger men, such as George Fitzhugh, James McDonnald, and Dr. John Davis, who embraced the vision of viticulture that Nicholas Herbemont had proclaimed. In Halifax, North Carolina, Weller planted his vineyard in 1828 and began commercial production in 1835, first selling as "Weller's Vineyard," later as "Medoc Vineyard."[1] Weller applied Herbemont's and later Nicholas Longworth's instructions on wine making to scuppernong grapes, including the "Weller" variety mentioned in Herbemont's final published letter to the agricultural press. In a postscript to this letter, Edmund Ruffin—admittedly no great connoisseur of wine and possessed of a great sweet tooth—found Weller's wine made in the Herbemont style, "the most delicious drink that we have ever enjoyed" (92). Weller's thoughts on the complementary character of grape and silk culture echoed Herbemont's exactly, and so Herbemont's last publication echoed the theme of his first major published tract, *Observations on the Recent Occurrences in Charleston*. Published in *Farmers' Register* 6, no. 2 (June 1838), 92.

Columbia, S.C., March 8, 1838

To Sidney Weller, Esq.

Dear Sir,—I have, yesterday, received your obliging letter of the 26th ult., and also three small cuttings of your grape vine, which you call 'Halifax,' and which I propose to call 'Weller,' after you.[2] It is perfectly fair to name plants, or fruit of great value, by the name of the person who introduce them, not only into notice, but takes great pains to extend their culture. By this means, benefactors of mankind have their names honorably transmitted to posterity.

1. For biographical information about Weller and extraordinary drawings of his vineyard made in the 1870s by an English artist, see Mortimer O. Heath, *Sketches in North Carolina, U.S.A. 1872–1878* (Raleigh: North Carolina Office of Archives and History, 2002).

2. This variety of *Vitis rotundifolia* was lost, but a recent discovery of an ancient vine on Weller's land may prove to be a survivor of this variety.

I am glad your opinion coincides with mine, as relates to the culture of the vine and silk at the same time by the same person. There are, perhaps, no two articles of culture, the prosecution of which interferes as little with each other; for at the very time that the silk worms require all the attention and care necessary to their welfare, the vineyard should not be entered, and indeed with the proper degree of industry required in the culture of any thing, the vines must be, during that short period, in such a state as not to require any thing being done to them. Besides this coincidence, as to time, much is to be done in the vineyard that requires more attention than strength; so that the same persons who are adequate to the cares of the silk-worms, are also sufficient to do much that is required in the vineyard. What sources of wealth and comforts will, I hope, be some day produced, by the joint culture of these two valuable articles. They are the more valuable that they require no capital of any amount to be established, provided there are larger proprietors in the neighborhood. These would always be ready and willing to purchase of their poorer neighbors, their cocoons and grapes of their own raisings; and these would gradually learn the arts of preparing the silk for market, and of making wine, *secundum artem*, as their profit would, in time, afford them the means of forming suitable establishments for these purposes. Another great advantage attending these cultures, so as to make them suitable for the poorer class of farmers as well as the richer ones, is that both these articles of culture, require land only of inferior quality for their fullest success. It is certainly a fact that the wines produced on poor light lands, are of a superior quality to those produced on richer clay lands. I have no experience in the culture of silk sufficient to enable me to speak of my own knowledge;[3] but the books I have read on the subject, state the fact clearly and distinctly, that the mulberry leaves produced on poor land produce finer and superior silk. Here are, then, two objects as valuable, if not more so, than any other yet cultivated in this country, which offer the incalculable advantage of leaving the richer lands for other necessary articles of culture. I regret much that I am too old to hope to see the immense benefits, which our country will derive from the culture and the vine. (We are never at a loss for finding a good reason for wishing to live long.) There is, I think, another object of rural economy that would harmonize well with the two mentioned above, and would tend to the great comfort of the cultivator, and that is the dairy. It appears to me that a dairy establishment would scarcely interfere at all, either with the raising of silk or of wine, and it would undoubtedly add much to the convenience and comforts, not only of the cultivators, but also of all the country around.

3. While Herbemont had silk worms and cultivated mulberry and osage orange trees to feed them, he never in the course of his life produced silk thread or established a weaving operation to process silk.

I had no idea at all of writing on these subjects, when I began to write; but my pen would go on, and I gave it its way. I merely intended to say, that I had received the three grape cuttings you were so obliging as to send me; that I gave one of them to one of my neighbors, who is also a zealous cultivator of the vine, and that I grafted the other two. I hope the box you are sending, will also arrive safe and in due season.

I am respectfully, sir, your obd't serv't.

N. HERBEMONT

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Observations Suggested by the Late Occurrences in Charleston, by a Member of the Board of Public Works, of the State of South-Carolina.

1822

In 1820 Nicholas Herbemont was appointed to the South Carolina Board of Public Works. In 1821 he presided over the body in a period when it actively engaged in a host of projects: road building, the creation of a state map, the construction of a canal that would permit waterborne commerce from the coast to Columbia, and the erection of a water system for the capital. In the spirit of this activism, Herbemont, speaking in the persona of a public official, advanced the idea that the state consider the renovation of its agricultural system. The immediate occasion of this tract was the discovery, in late spring of 1822, of the conspiracy of a group of slaves led by freeman Denmark Vesey and Gullah Jack to revolt and seize ships for the liberation of African slaves around Charleston. Herbemont, who had first come to public notice in South Carolina for his translation of the life of black liberationist Toussaint Louverture in 1801, did not doubt the threat of slave insurrection or the capacity of Africans and African Americans to succeed. He indicated that the only sure way to avoid this danger was the abolition of slavery and the exportation from the state of all liberated freemen. Failing that, he argued for the transformation of the state's agriculture by the importation of European farmers into the Midlands to cultivate olive trees and grape vines, herd sheep for wool, and grow mulberry trees to feed silkworms for silk manufacture.

He imagined several benefits: the entire revaluation of the land of the Carolina sand hills and pine barrens, increasing state revenues and productions while diversifying agriculture; the increase in the white population diminishing the likelihood of black rebellion; and the creation of an agrarian economy that could compete with the newly opened lands of the West that were tempting ambitious Carolinians to leave the state. This first summary vision of a future economy for the South announced themes that would be echoed for the remainder of his life. He published the tract at his own expense, contracting the printer of the *State Gazette* newspaper to set type. He distributed the pamphlet gratis to persons

throughout the United States, including Thomas Jefferson,[1] who wrote back commending the cultivation of olive trees particularly.[2] The tract, however, reached a broad readership when republished in the pages of the *American Farmer*. Published in Columbia by the State Gazette Office, 1822.

Preface.

The following remarks on the capability of the State of South-Carolina to support a much greater population than it now does, and the adequateness of a considerable portion of its soil to the productions recommended in this little Tract, are not, properly speaking, the suggestions of the late occurrences in Charleston; but have long been the object of the writer's studies and consideration. This was thought a fit moment, however, for producing and offering them to the public, leaving it to more able persons to digest a suitable plan for effecting the objects proposed, if they are found worthy of approbation.

Observations, &c.

It has frequently been asserted, and probably with truth, that slavery is an obstacle to improvements and to the increase of the white population. The late distressing events in Charleston prove that it certainly is attended with considerable danger.

Very few persons in the Southern, as well as in the Northern states look upon it in any other light than as a great evil entailed upon us by our ancestors, and, like hereditary diseases of the human body, the cure is extremely difficult, and all that can be done with comparative facility is to administer palliatives. Some means at this time seem necessary to be adopted to check the growing evil, whether it is intended ever to suppress slavery totally, or merely to modify it so as to correct in a great degree the worst effects of it and prevent, if possible, the recurrence of the late disturbances. It is not intended here to discuss the subject of slavery; but, taking the present situation of things as we find them, the question is, what is best to be done consistently with humanity towards our slaves, and our duty to ourselves and posterity?

In order to answer this question, it will be necessary to take a brief view of the present state of things, considering at the same time the probable causes that led to the evil complained of.

1. The Thomas Jefferson Papers, Series 1. General Correspondence. 1651–1827. N. H. Herbemont to Thomas Jefferson, October 18, 1822. Library of Congress.

2. The Thomas Jefferson Papers, Series 1. General Correspondence. 1651–1827. Thomas Jefferson to N. Herbemont, November 3, 1822. Library of Congress.

There is not the smallest doubt that the condition of our slaves has been very greatly and progressively ameliorated since the revolutionary war. The spirit of philanthropy which has been more generally diffused with education, knowledge and milder manners, joined particularly to the self-interest of the owners of slaves, have availed much. The introduction of labour-saving machinery has rendered the labour of the slaves much lighter than formerly, besides which they are better fed, better clothed and treated less harshly. If we compare the situation of our slaves with that of the labouring class of other countries, the former will be found, most undoubtedly, to have considerably the advantage. Whatever the dearth of provisions, clothing, fuel, &c. they are sure to be abundantly supplied. When they are sick, they have always good medical attendance; they have no uneasiness concerning the bringing up of their children, and when disabled by disease, infirmities or old age, they are certain of their usual support without ever being under the necessity of recurring to mendicity.[3] Their work is usually light, never above their power, and it is not uncommon to see them return home after having finished their day's work at 1 or 2 o'clock, and frequently even earlier than this.[4] There are few or no instances of this among the poor class in Europe. The slave having finished his task is perfect master of his own time: he either sleeps or works in the ground allowed him for a garden, by which means he is enabled to procure a few articles of comfort. But whether he sleeps or works for himself, his mind is absolutely free from any kind of trouble either for the present or the future, for himself or for his children. In short he is fully satisfied that happen what may, he will be supplied with food and raiment, and he is never in danger of seeing the constable seize his bed for house rent, &c. Notwithstanding all this we admit that slavery is far from being desirable either for the slave or the master. Apathy, indolence, and want of energy and industry are alike, generally, the portion of both. Our house servants lead still an easier life. Their number is such in every family that each of them has but little to do, and here, perhaps lies a great part of the evil. Town slaves, whether mechanics or house servants, are always very well fed and well clothed. They are selected from among the most intelligent, and, by the misplaced indulgence of masters, many have been allowed to learn to read and write. It is among these idle pampered fellows that we must ever expect to find discontent, and it is a well known fact that all the blacks concerned in the late attempt at an insurrection belonged to very indulgent masters, and were, almost without exception, fully in the enjoyment of their masters confidence. Many of them were, or pretended to

3. Beggary.

4. Herbemont indicates that Carolina slaves operated in the 1820s under the task system, in which a quota of work was allotted a worker of a particular plot of land. See Philip D. Morgan, "Work and Culture: The Task System and the World of Lowcountry Blacks, 1700 to 1880," *William & Mary Quarterly*, 3rd Ser., 39, no. 4 (October 1982), 563–99.

be, very religious, and several were preachers.[5] In the revolution of St. Domingo, it was almost without an exception also that the most indulgent masters were the first sacrificed. Severe masters have kept their slaves at work on the plantation a very long time after the country was in a state of rebellion and the Negroes had been declared free by the French government.

From these indisputable facts it would appear that great severity is the surest means of keeping slaves in due subjection. But God forbid that such a plan be adopted!

Humanity forbids it, and when we have recourse to severe punishments, it ought to be only in obedience to the commands of the most imperious necessity.

Another great cause of discontent among the slaves in towns, and which it becomes our duty to remedy, is that many mechanics and others hire their own time from their owners. If they are intelligent and industrious, they undertake work on their own account, by which they make a great deal of money which they spend as they please, and by that means, create a great degree of jealousy among the others who are not allowed similar privileges. If they are vicious and ill disposed, it puts it in their power to do a great deal of mischief. Another source of disquiet among the slaves, one which perhaps justice and equity prevents our remedying, or which at least cannot be remedied but on the plea of expediency and the great law of nature, self-preservation, is the great number of free Negroes and other coloured people who live among us. Some few of them are honest and respectable, but the greatest number are otherwise. Their mixing with our slaves, renders them dangerous by their counsels and the example of the idle or dissolute lives which many of them lead. Would it not be well for the legislature to prevent the increase of their number by obliging all slaves who hereafter shall acquire their freedom, by any means whatsoever, to leave the state?

Among the several means that suggest themselves to us, none seem so well calculated to answer the end in view as those by which the white population would be considerably augmented. This, however, requires some exertion on our part and some money judiciously expended, for as the tide of emigration from Europe does not set this way, it is therefore necessary to give it a direction. As for emigration from other states to this, we conceive it not so desirable as that from Europe, because, by it, we would gain population at the expense of our neighbours, and that by the other, not only the increase of population of this state would be effected, but also that of the United States. Neither would emigration from other states favor the plan here to be developed, besides, we have not, for the inhabitants of others states, except mechanics, inducements to emigration equal to those offered by the rich soil of the Western country.

5. Herbemont in a peculiar way describes the trajectory of the development of Frederick Douglass's consciousness described in *A Narrative of the Life of Frederick Douglass, an American Slave* (1845).

All writers on political economy agree in one particular which, it is presumed, no one will dispute, and that is, that the power and wealth of states is always in proportion to their effective population. Therefore the great object of governments is or ought to be to promote the population of their country in proportion to its territorial extent and resources, by introducing every article of culture, commerce or industry, suitable for them, that the people may be industrious, honest and happy as well as numerous. We have here an uncommon inducement for endeavouring to produce such a state of things, and it is that were our state thickly inhabited by an industrious class of white people, our slaves would never think of making any attempt at an insurrection. Besides this, if it should ever be thought adviseable to suppress slavery entirely and send away the emancipated blacks to where they might be independent and happy, if they would be industrious, we should have a population of whites ready to spread itself on our richer lands.

Supposing the state of South-Carolina to contain sixteen millions of acres, (accuracy is not here essential) it is thought that nearly on half of it is pine barrens, sand-hills and other pine lands amounting therefore to about eight millions, out of which ought to be deducted about three millions for the water courses and our rich swamp lands bordering on them, and a small quantity of pine land of the better quality, which is presumed to be a full allowance. There remains then an extent of five millions of acres of pine barrens and sand-hills which support at present but a very scanty population of such inefficient people,[6] with some few exceptions, that it may not be considered as adding in the least to the wealth or power of the state. The land itself is considered as of little or no value in its present state. The land itself is considered as of little or no value in its present state. Is this vast tract of country really of no value? And is it not capable of useful productions and of supporting a more numerous and better class of people? It is what we are going to examine.

In what precedes let it not be imagined that we intend to cast indiscriminately any censure on all the inhabitants of the sand-hills. We know of some exceptions of honest and industrious people, which serves to prove that their lands have some value, as some of them live decently and raise numerous children; and, were they taught the raising of productions better adapted to their soil, might be in comparative affluence.

Four different articles of first rate importance might be raised, it is presumed, in this tract of country, viz: Olive oil, wool, silk and wine.

The olive tree is supposed not to thrive well at a considerable distance from the sea; but it does not require a rich soil, and it is probable would grow and thrive in the pine barrens in the lower part of the state. Particular and convenient spots of

6. Inefficient people are those engaged in subsistence agriculture rather than productive agriculture.

these lands might be selected for the purposes of making the experiment with great probability of success. The writer of this, for want of experience, can say nothing positive on the subject, except from what he has seen in countries where the olive is cultivated most successfully, and the writings of eminent authors. The celebrated writer on agriculture, the Abbe Rosier, says: "The choice of soil is in general very indifferent for the olive tree, since we see it grow and succeed well in *sandy, stoney, gravelly*, and also in volcanic soils; it is even in those soils that it yields the finest oil," &c.[7] Is it not worth while to make some attempts at introducing the culture of so valuable a tree? Our most eminent statesmen have recommended it.[8]

There is no kind of doubt but sheep would do well in this country, and the great demand for wool, particularly of the finest quality for the manufactures in the Northern states,—gives us the greatest encouragement to raise this most invaluable animal as an article of commerce, the carcases of which would also be a most valuable addition to our meat markets. Many objections have been raised against the rearing of sheep, and those who have tried it have succeeded but imperfectly. It cannot be denied that sheep, like any other domestic animal, cannot be raised to advantage without having some care and attention paid to them; but the expense attending on these cares will probably always exceed the proceeds, so long as we keep them in such small numbers as has been done heretofore in this country. We find in the invaluable correspondence of Gen. Washington with Arthur Young and Sir John Sinclair, among others, the following observations: "Wolves are named as a motive for not keeping sheep; surely they cannot be serious who urge it. They abound all over Europe, in France and Spain, among the greatest flocks in the world; and no wolf could get into my sheep-houses, or at least I may say, that nothing is so easy as to keep him out, even of a yard. Dogs are also an enemy; but America surely has laws, as well as we, that make every man answerable for the mischief done by his dog. By night, if secure from wolves they are secure from dogs, and by day, shepherds may have loaded fire arms to kill all that approach. *While they are kept by scores, such objections may hold good; but when by hundreds and thousands, they must vanish*."[9] It is very evident that so timid an animal as the sheep must always be protected against its enemies, and that a fair experiment

7. Abbé Rosier, *Cours complet d'agriculture Théorique—pratique—économique et de médecine rurale et vétérinaire. Ou Dictionnaire Universel d'agriculture par une société d'agriculteurs*, 5 vols. (Paris, 1786). Herbemont's translation.

8. In 1819 Thomas Jefferson wrote a letter to the Agricultural Society of South Carolina particularly commending the cultivation of the olive tree in the state. This letter reiterated points he had made in the mid-1780s in letters to William Drayton and Edward Rutledge, who were then experimenting with the cultivation of olive trees in the Lowcountry.

9. George Washington, *Letters from His Excellency George Washington, to Arthur Young, Esq. FRS, and John Sinclair, Bart. M.P. Containing an account of his husbandry, with his opinions on various questions in agriculture; and many particulars of the rural economy of the United States* (Alexandria: Cottom and Stewart, 1803).

can never be made with them unless it is with a number competent to defray the expense of a shepherd. A shepherd with a pair of dogs, it is believed could be easily procured from Europe and kept here at a very small expense; as the wages of such a man are there very trifling. Hundreds of extensive flocks would fund abundant and wholesome pastures in our sand-hills, and a sufficiency of cow-peas, &c. might easily be raised for their wintering.

This object, it is true would not directly tend to increase much our population, as very few persons are sufficient for a great number of sheep; but by adding considerably to our wealth and means of subsistence, would promoted the intended object.

Silk is the next object to be considered. The mulberry tree, on which the silk worm feeds, is found to grow spontaneously all over the state, in our sand-hills as well as on the rich banks of our rivers. The imported seed of the European mulberry tree grows very well here, as the writer of this can prove by ocular demonstration, having upwards of one hundred of them. The climate is very suitable for the tree as well as for the worm, and our sand-hills are eminently calculated to raise great quantities of silk of the best quality, for it is found that, as the olive oil is of a superior quality when raised on a poor sandy soil, so is the silk produced from worms on the leaves of the mulberry tree that grows on a poor soil, found to be of the finest quality. A reference to the author already quoted, "the Abbe Rosier," will prove this satisfactorily.

> It is to be observed that the raising of silk is very little or no obstacle to the cultivation of any thing else; for the life of the worm is only 4 to 6 weeks when the crop is completely obtained, and attention may then be turned to any thing else. To cultivate this valuable article with advantage, it would perhaps be indispensable to procure a few individuals from the South of France or from Italy, who, for this object, joined to some other, might be suitably settled in our sand-hills. The growing disposition for manufactures in the Northern states indicates to us what we ought to do to supply them with the raw materials they want. *Every effort of this kind tends to cement the bonds of our union, and this consideration, independent of any other, ought to induce us to avail ourselves of all advantages which our soil and climate offer our patriotism as well as to our industry.* [*Cours complet d'agriculture*]

That silk can be raised in this country cannot admit of a doubt; for it has repeatedly been raised in a small way, and many of us may remember a worthy member of the legislature from Abbeville wearing in Columbia during the last war,[10] silk homespun clothes. It is not within our reach at this moment to ascertain the amount of silk raised in other countries, either in quantity of substancy or in its

10. Abbeville, the center of Huguenot culture in South Carolina, established a robust silk manufactory under the Gibert family during the second half of the eighteenth century.

value in money; but we know it is very great, and it is undoubtedly a considerable source of wealth wherever it is raised in quantities, by affording employment for many poor people, and furnishing materials for the richest manufactures.

The next and last object of culture recommended for our sandy lands, and probably the most important in every respect, is the *grape vine*. Col. John L. Sullivan, in his very valuable little essay on the "principles of political economy applicable to the public works, commerce, and finance of South Carolina," says (page 8) "The Southern states, whenever it is for their advantage, will supply the rest of the states, (besides their present staples,) with all the sugar, *oil and wine*, they may require.[11] A report of the secretary of the treasury, a few years ago, estimates the value imported in one year, to have been, in wine, eight millions of dollars, in spirits, eight millions," &c. and (in page 21,) "Those extensive tracts of sandy soil may be found congenial to the vine, and like the same soils in the South of Europe, where health reigns perennial, yield those mild tonic wines, so friendly to health, temperance and prosperity."[12] Many other writers have expressed the same opinion, and it is a matter of surprise that the experiment has never been fully made. The writer has no doubt, from the attention he has, for some years past, paid to this object, than an experiment properly and fully made would be attended with complete success.

That the vines will grow in our sand-hills is to be inferred from the following considerations: 1st. They do well in similar soils in Europe and other countries. 2nd. Our sand-hills abound with native grape vines, some of which may be usefully cultivated. 3rd. The cultivated vine is found to thrive well; not to grow with that injurious luxuriance experienced in richer soils, which is probably one of the causes of the rot. 4th. The climate is similar to those known to produce the best wines. Indeed it would be a very strange case (were it a fact) if the vine could not be made to succeed here. It is found to do well in all countries in similar latitudes, either North or South, Europe, Asia, Africa and South America produces wines, and why not South-Carolina? It will be objected, perhaps, that the soil of our upper districts is better suited to the different articles of culture here proposed, but besides its being very doubtful, the intended object would not be answered. We certainly do not wish to discourage the introducing of any new culture in the upper districts; but we must keep in mind that the great object is to give value to an extensive tract of country which at present possesses none; increase the population, wealth and importance of the state by adapting different articles of culture to the different kinds of soil suited to them, and particularly in those soils that

11. John Langdon Sullivan, a New England projector who engaged in canal building, steamship development, and the coastal trade with South Carolina, composed an extraordinary pamphlet literature in his lifetime. This title does not survive.

12. *Report of the Secretary of the Treasury, of the Commerce and Navigation of the United States* (Washington, D.C.: Gales & Season, 1819), 21.

are not probably suited to the production of any thing else that has as yet been discovered.

With such prospects as are here exhibited, shall we not make an attempt that promises such vast resources, and advantages of every kind? The culture of the grape requires, or rather admits of a dense population. It has a tendency to diminish the practice of intoxication, by furnishing a lighter beverage for the working class of people; and the advantages of habits of temperance and sobriety are incalculable. By it a vast extent of country, now of no value, would rival in products some of our best lands. Who can foretell the future value of these lands? Similar ones in other countries when under this invaluable culture are sold at enormous prices. What advantages in a political point of view! Nearly five millions of acres of land now unproductive and uninhabited, after a few years bearing nearly the same prices as some of our most valuable lands, and thickly settled by a hardy, industrious and honest people. What a source of revenue to the state, and what an efficient force for the defense and protection of the country! If we do not adopt measures tending to obtain some such ends, *how can this state keep pace with the progress of the other states in population and power?*

It is not intended here to induce a belief that every spot of these five millions of acres is suitable for grape vines. It is not so, nor is it desirable that it should be so. A considerable proportion must be cultivated in corns, pease, potatoes, &c. by the vine dresser himself for his support and that of his family. A considerable part of this land will probably never be in a state of cultivation; but it will answer for sheep-walks, pasturage for cattle, timber for building, fuel, &c. Admitting even that the population in this tract of country should not exceed, on an average, one person for every fifty acres, still it would form a population of one hundred thousand; but it is susceptible of maintaining many more, probably one family or more on every fifty acres. This country being settled by persons accustomed to labour and industry, in the collection of manures, and encouraged by the example of abler cultivators, would soon change the face of the country and render it comparatively fertile.

That emigration from Europe which is naturally directed to the Northern and Western states may be partly diverted to this by offering advantages to emigrants. Almost any numbers of cultivators of the vine may be procured from different parts of France by defraying the expense of their voyage, and by the promise of a certain quantity of land to each individual or family, after having worked a small number of years for the importer or for him who would give them their lands with the necessary means of forming each his settlement. Besides the cultivation of the vine, they would raise their own provisions so as to be as independent as practicable.

A question here naturally occurs, which is: What will be the expense of forming such an establishment? This is, perhaps, not the proper place to enter into

more of the many details of the plan, but the expense would necessarily depend on the number of families first brought in, and this to be sufficient to make a very full experiment, need not be considerable; but, however the plan is carried into execution, it must be the work of time and of the efforts of disinterested patriotism or of legislative assistance. A small number of families having been thus brought and settled, they would undoubtedly invite their friends to join them, and, in the course of time, when their successes could no longer be doubted, persons having capital to enable them to emigrate at their own expense, purchase land and form settlements, would come and add to the number as well as to the stock of industry and wealth of the state. Thousands of poor people in France, Germany, &c. whose industry, hard labour and the strictest economy can scarcely afford them the means of supporting life, would be happy to come here, and even supposing (which is very improbable,) that they could not succeed in raising the vine to advantage, they would still be better off than in their own country, where they have no prospect of ever acquiring an inch of property. Here by their labour, they would be certain of their support, they would enjoy tranquility and freedom, of which they can have no hope in Europe. They would be here in a country as healthy as any spot on earth; for this is most undoubtedly the character of our sand-hills. Therefore, even on the event of a very improbable failure of the principal object of culture, the others could not fail; and, while we would have increased the wealth and importance of our state, we should enjoy the philanthropic pleasure of having bettered the condition of thousands of people, by placing them in the full enjoyment of all the advantages of a free government, viz: *Abundance, liberty and equality*.

Let us allow ourselves for a moment to indulge in the prospect of this state furnishing to the United States all the wines and brandies for their consumption. What enormous sums retained in the country, produced by the soil and the industry of its inhabitants! Have we not a right also to expect besides wine and brandy, raisins, almonds, figs, and other fruit which we now get at great expense from the same countries from which we get our wines? Furnishing at the same time to the manufactures of the North a great proportion of the wool and all the silk they may work up into cloths, stockings, ribbands, &c. Let us also view in the prospect, the great security we should enjoy as the natural consequence of so great an increase of our white population, and the great facility which this state of things would give us to abolish slavery, if ever it should be thought advisable to do so. Such a state of prosperity is so dazzling that it seems as if we were basking in the sunshine of visionary schemes rather than coolly and soberly deliberating on the means of attaining practicable reality.

Address to the President and Members of the United Agricultural Society of South-Carolina, at Their Sitting in Columbia.

December 1, 1828

The highlight of Nicholas Herbemont's life was the award of the gold medal of the United Agricultural Society of South-Carolina at its 1828 annual December convocation. This special award recognized Herbemont's contributions to the improvement of agriculture in the state. The legislators of South Carolina may have revealed their lack of imagination in turning down his 1826 scheme to vitalize the Midlands of the state. The society would not evince such stupidity. They requested that Herbemont present a summary view of an alternative political economy for South Carolina. Herbemont used the occasion to think deeply about the concerns that occupied him in his 1822 *Observations* (see previous essay). Yet his reverence for the grape demanded that he begin his philosophical meditation with a report on that fruit which he conceived to be the primary means of improving South Carolina. After his report, he dove into the matter of making agricultural renewable by diving into manure. Few people of his time and place had so sanguine a regard for the powers of dung, plowed in cow peas, and fossil shells pounded into dust. He delivered this talk and then received the medal and an engraved citation. These two items were among the very few possessions that Herbemont bestowed in his last will and testament of 1838. They went into the keeping of his friend and inheritor of the Palmyra vineyard, William F. DeSaussure. The Tariff of 1828 had convinced many that they were living in the midst of a crisis. Herbemont's words promised a way out of travail. Because the Agriculture Committee of the South Carolina Senate was debating the general issue whether the government should subvene agricultural projects, Herbemont may have wished this speech to prompt a reconsideration of his memorial of 1826. Whatever the case, the senate determined that it should not take an active part in the restructuring of the agricultural system. Published in *Southern Agriculturist* 2, no. 7 (July 1829), 289–97.

Mr. President and Gentlemen:—Having at your two first sessions, presented to you a report of my experiments on the culture of the Grape, and also of some of my views connected with the same subject; it appears to me that I am impelled by a sense of duty, to report at this, your third session, notwithstanding the very unfavourable account I am obliged to make.

Indeed, the crop of grapes almost totally failed the past season, so that I made so little wine that the quantity is not worth notice, being only twenty-five gallons.[1] It is of a good quality. The cause of this failure is, however, easily accounted for, and you all know that our last winter was a very uncommon one, having scarcely had any frost at all, and that the weather kept so warm that almost all who are in the practice of curing every winter their provision of bacon for the ensuing year, have never met before with such severe losses in this way, as they suffered then. It is believed that there was more pork lost during the last winter in this State, than in any successive ten years before. The effect of this untimely warm weather on vegetation generally, was such that it seemed to derange its natural process for the whole of the following summer. In fact, plum, peach, and other fruit trees, blossomed (many of them) in April and May, when it was too hot and dry for the fruit to set with advantage, and these, as also apple and pear trees, blossomed at different times, and late in the summer, in a most unexampled irregularity. This produced small stunted fruit, quite out of season. As an example, I gathered in October, peaches of the size of a common plum, sweet; but without a kernel, from a tree which usually bears fruit of the very largest kind, early in the month of August.[2] The warm weather of the winter was followed by frost in April, of uncommon severity. The vine had then put out shoots from two to six feet long, and such was the intensity of the cold that, by freezing the sap, it burst the bark even of the old wood in many instances. Having conversed with our oldest men on the subject, it seems to be agreed that there was no such winter, to their recollection, unless it be that of the year 1780–81—which, as it was during our revolutionary war, seemed a providential favour to our naked militia.[3]

While we must bow with resignation and entire submission to the behests of a kind Providence who knows what is good for us better than we do ourselves, we may be permitted to observe that, according to our imperfect views, such a failure could not have happened at a more unfortunate time. If, Gentlemen, you feel with me the vast importance of the culture of this invaluable plant, you will join with me in regrets that any thing should occur, calculated to retard its introduction. Shall we, however, be discouraged because we have been checked in our career? Failures occasionally occur in all the pursuits of men; and because a ship has been

1. Of all of Herbemont's seasons as a grape grower from 1814 to 1838, this proved to be the worst. Yet the scale of his operation was such that a near total loss did not daunt his efforts in years to come.

2. From the description and date of ripening, this was probably a Crawford's late peach.

3. The year of the battle of Cowpens.

wrecked, shall the mariner forever abandon the sea? No, this is not according to our wonted practice and our habits of perseverance. The crops of every article of culture are liable, not only to fail sometimes almost totally, but also to vary much in extent; and this variation is probably greater in the produce of the vine than in any other; so that, if the crop is sometimes small, it is also frequently more than double what is considered a fair one.

It may be presumptuous of me, Gentlemen, to lay before you my crude thoughts on a subject so important; but when the aim is the development of our internal resources, and the capability of our soil to administer most amply to all our wants, and also to our luxury, small considerations may be overlooked; but, if we add to this, the perfect practicability of making it, to an unlimited extent, to administer also to our wealth, to our power, to the permanency and security of our most valuable institutions, nay, perhaps, to the continuance of our very existence; every other feeling must be disregarded, except the wish of being useful. I therefore approach this subject unhesitatingly, and begin by asserting most confidently that our various soils and climates are adequate to the production of every thing we may possibly need. We have hitherto been only considered as capable of producing those rich staples which, in common parlance, distinguish the planter from the farmer; but, I believe it can easily be shown that we are also most eminently fitted for the productions which exclusively distinguish the farmer.

You all know, Gentlemen, that the great secret of agriculture is in the abundance of manures prepared to be used on a plantation, farm, or garden. It follows from this that the country in which cattle can be reared with the greatest facility, is the country where agriculture can be carried on with a success the most easily obtained. Now, I believe, there is no country north of us, which enjoys equal facility, and we only want system and good example, to follow the best practices and form the most beneficial habits. We all know the Crab grass (Digitaria sanguinalis,) and the Crow-foot grass (Eleusine indica,) but these two grasses have generally been known only as great pests to the farmer and planter; and few, very few, have ever tried to turn their luxuriance to advantage.[4] When we see our Charleston papers defiled with the advertisements of hundreds of bales of northern hay for sale, we seem not to be aware of the pertinacity with which these, among our native grasses, are forcing themselves upon our notice, to drive away from our external commerce, an article so disgraceful to our agriculture. The relation of one single fact, to which some others might be added, is sufficient to exemplify to your satisfaction, that I, here, advance nothing but what is most strictly true. One of my

4. Grasses used as forage and green manures were objects of Herbemont's study in the late 1820s and early 1830s. See "On Artificial Grasses," September 8, 1828, *Southern Agriculturist* 1, no. 12 (December 1828), 549–51; "Gama Grass. July 15, the 1833," *Farmers' Register* 1, no. 5 (September 1833), 216; "Notice of New and Valuable Indigenous Grass, (Leersia Orizoides) by N. Herbemont. November 23, 1833," *Southern Agriculturist* 5, no. 11 (January 1833), 12–14.

neighbours, an enterprising and very intelligent man, has made this last summer, from eight acres of high land, first a great crop of oats, and then upwards of forty thousand pounds of most excellent hay, certainly equal, at least to the best northern hay.* I have his permission, Gentlemen, to invite you to come and examine it. Now, this is uncommon only because it is seldom attempted; but there is an absolute certainty that all our light lands, our sand hills always excepted, are capable, by a good rotation of crops, to produce, at least very nearly the same result. Indeed the question the most proper seems to be, *not what can we do;* but *what can we not do?* Having an abundance of cattle, if we have not an abundance of manure, it is our own fault; and having plenty of manure, it is in our power to have great crops, by means of which we can raise as much meat, raise as many horses and mules as we can possibly need. How are we to avail ourselves of all these advantages within our power, is then the only question to be solved. This comprehends a difficulty not as easily overcome as would at first appear; for, to conquer it, we must not only conquer our old habits, but also our apathy, and the insufficiency of our efficient population.

In examining this subject, or indeed any subject of public interest at this momentous crisis, you will not expect, Gentlemen, that I can refrain from adverting to our political situation; a situation pregnant with every evil that can assail man in a civilized state.[5] But, Gentlemen, place the foundation of your power on agriculture, and if proper means are energetically and judiciously contrived, she will confer upon your country the most durable, as well as the greatest of blessings: namely, wealth, an abundance of all the good things of this world, and political independence with the power to perpetuate it. It is true that "it is agriculture which feeds the world?" It is true that "it is agriculture which furnishes the materials which clothe the world?" It is true that "it is upon agriculture that mankind are dependent for almost every necessary, and most of the luxuries they enjoy?" Is it true that she alone can produce and support a dense population, and is thereby the foundation of all power? Is it true that the number of our efficient or white population, is a great deal too limited, and on the decrease? Is it true that our country is capable of supporting a much more numerous one by a proper course of agriculture? Is it true that the strong, when prompted by self interest, has always trampled, and always will trample upon the rights of the weak? Is it true that we have now cause to fear being in the latter situation? If these be not true, then let us go on as we have hitherto done; but if they be true, have we not motives enough to spur us to uncommon exertions? I am fully aware, Gentlemen, than an agricultural society, though it be one formed of all the societies of the State, is not fully adequate to bring about such a revolution as alone can now save us; but I am also

5. Herbemont believed, as did the majority of his readers, that the passage of the Tariff of 1828 would lead to the collapse of the cotton culture and hence the economic ruin of the region.

aware that your energetic representations to the legislature now in sessions, can do a great deal, and probably all that is necessary to be done.[6] What are we to do? To answer this we need only look at our deficiencies, and if they are remediable, afford the remedy.—Our white population is too small—increase it. We have millions of acres of unoccupied land perfectly healthful and suitable to our purpose. Bring foreign cultivators of the vine, of the silk, of the olive, and farmers generally, and locate them suitably, and they will supply all your deficiencies. These foreigners can now be had with an uncommon facility; for parts of Switzerland and Germany are now overflowing with inhabitants, and sending away their superabundance.

It may be said, and I know it is strenuously insisted upon by many, that governments ought not to interfere with these affairs. This opinion is surely expressed without due consideration; for, if it be not the business of governments to place their agriculture on the best footing possible, to provide means for the population of its territory, whose business is it? Who else can do it? Is the state of agriculture in a country such an indifferent thing, that it must be left to form its beginning, and progress on as it may? To borrow the expression of a much valued correspondent from a neighbouring State. After saying that it is the undoubted duty of governments to establish and encourage their agriculture, he says: "A few thousand dollars expended from the public purse, would lay the foundation of an agricultural wealth, and an agricultural power, that would stand the 'wreck of empires, and (all but) the crush of worlds.'"—"What has enabled France to rise in beauty and wealth, and power above all her enemies, after thirty years of revolution, internal and external, but her deep rooted and wide spread agriculture? And the arts, commerce and manufactures, while they spread temptations before the spoiler, in a few ages are trodden down, lost and forgotten. But in agriculture, man is but a feeble instrument: the sun, the earth, the heavens, are the great machinery that are employed; and these, happily are beyond the control of the oppressor. Thus it is that Egypt, a prey to barbarian nations for many centuries, yet presents, in her rice, in her wheat and other products of her soil, monuments of her past wealth, as imperishable as her pyramids."[7]

It is not absolutely impossible for these great things to be done without the direct assistance of governments; for wealthy individuals, and agricultural societies richly endowed, might possibly do it; but it is extremely improbable that it will ever thus be done, and it has ever been the business of governments in all countries, and at all times, to make the successful efforts to place their population and agriculture on a respectable and permanent footing, after which, the exertions and encouragement by societies, and the example of patriotic and enlightened men

6. Herbemont refers to the investigation by the state senate's Agriculture Committee into the question of the funding of agricultural projects.

7. Thomas Spalding of Georgia.

have done, and will continue to do the rest. In short, governments must undoubtedly lay the foundation so that it may rest firmly, afford it protection, and leave the care of the superstructure to those immediately interested in its success.

We are naturally and essentially an agricultural, and therefore, a commercial community. Agriculture being the parent of commerce, needs the first patronage of government, by which the other is necessarily benefited. Why should the stream be most sedulously guarded and protected, while its source is choaked with rubbish that threatens to divert its course into other channels?

In order to test the value of what is here proposed to be done, namely, to favour the emigration of agricultors to this State, to facilitate to them the means of becoming, as speedily as convenient and practicable, proprietors of land; to encourage duly the introduction of new, valuable cultures; to recommend in an efficient manner, and chiefly by example, the adoption of a proper and judicious system of rotation of crops (and this could be much more easily done by means of a great number of new settlers); in short, to replenish as much as practicable, our deserts with a hardy, healthy, industrious and honest population. Supposing this practicable, and it surely is; let us examine what possible disadvantage could arise from it, under any possible circumstance. Let us suppose that Congress, at their very next session will repeal, not only the tariff but all other laws that we so justly complain of, and that they sincerely abandon forever the unjust principles on which they are grounded; our advantages must still be in proportion to our wealth, our population, and our sources of revenues.—Let us suppose, what is more probable, that if these obnoxious laws are repealed at all, they will only be partially so, and for a time, or that their principle is not given up;[8] or let us suppose the very worst, that circumstances may hereafter compel us to direct resistance; will not the proposed state of things be the only one by which our resistance may be effectual? What other means have we of securing our independence, our very lives? I know of none: for we know too well that the justice of our cause is not sufficient to protect us, unless it is backed by stout arms and stouter hearts.

Many wealthy families of the low countries are forced by the unhealthiness of their plantations, to spend their summers abroad, away from the spot where their interests lie. I believe it would require very little more than their expenses of one season in the north, to form most valuable and useful establishments in our sand hills. Here, the low country planter would superintend his little farm, his vineyards, and making from their fruit abundant, pure and whole-some wines. Here, his presence would shower benefits, plenty, and happiness, on all his dependants. Here, he would be repaid for these blessings conferred by his agency, by health both of body and mind; by seeing his family, the dear pledges of his love grow and increase in vigour and wisdom. Here, their love of country would not be estranged

8. This was what would happen.

from their own State, by being brought up abroad.—Here, he would cultivate in peace and plenty those relations which bind man to fellow man, and are the never failing sources of all the happiness we are allowed to enjoy in this world. Oh! That I had the elegant pen of Virgil, Delisle,[9] or of Florian,[10] to pourtray to you, Gentlemen, that simplicity of innocence, that rural felicity, which can only be obtained by cultivating, with the soil, all the mild, gentle, and peaceful virtues of rural life! But if I am denied this talent, my wish for your happiness and permanent prosperity, and that of our State, fills the whole capacity of my heart.

I have perhaps, Gentlemen, transgressed a great deal too much on your time and your indulgence, and I know that the great good I propose to be done, is not without is difficulties; but those are not insurmountable, and most assuredly the object is well worth the making of uncommon exertions; it is nothing short of our political and domestic independence, and, perchance, our existence. I wish to have these, my views of this subject, recorded, at least in your memories, Gentlemen, that when hereafter you are forced to reflect deeply on it, you may still be more inclined to forgive my pertinacity, than I fear you are now disposed to do, although I am truly much indebted to, and sincerely thank you for your indulgence.

I am, most respectfully, Gentlemen, your obed't. srv't. and fellow citizen,

N. HERBEMONT

*Produce of Hay near Charleston. Communicated to the Editor by the late Dr. Harris from his Pocket Books.

By Mr. Turpin:	lbs. Per acre.
From three acres Hay land, measured with 100 loads,	19,990 lbs. Hay—6,633½
From two " " not so highly manured	8,700 lbs. Hay—4,350

By Dr. Harris: Half an acre, manured with 14 or 16 loads of manure,
Produced $30 worth of Irish Potatoes, and upwards of 2,000 lbs. Hay. (*Editor of the So. Ag.*)

9. Abbe Jacques Delille (Jacques Delisle).
10. Philippe Antoine de Claris, marquis de Florian, French aristocrat and author.

Honesty Is the Best Policy.

Second Prize Essay, Rural Economy

March 1832

The *American Farmer* attracted a great many letters, reports, and notices. Few of its many contributors composed cogently argued essays about the art and theory of agriculture. In order to stimulate such writings, editor Gideon B. Smith instituted an essay contest that would be reinstated intermittently throughout the 1830s. Herbemont, having puzzled over the inability of his state's politicians to engage seriously in the reform of the agricultural system, even when a political crisis threatened its destruction, came to a conclusion that the political economy of the South suffered from a kind of falsity, a bad faith, practiced by exploitive planters in pursuit of money rather than contentment. In this essay Herbemont articulated his philosophy of an agrarian "good life." Its foundation lay in an ethical resolve to live and act honestly. *Honesty* came in Herbemont's understanding to become a term of broad significance, naming a determination to act with understanding and good intention toward the place, the people, the creatures, and the land with which one lived. Published in *American Farmer* 41, no. 3 (March 30, 1832): 21–23.

Happiness is the object of pursuit with all men, from the greatest potentate to the humblest shepherd; and indeed, I might say, with all animated creation. This being, then, the supreme object of all our endeavours, it becomes rational creatures to seek it by the surest and most direct road that can be found. This road has long been known to exist solely in honesty; hence my choice of the old apothegm selected as the epigraph to this piece. I apply it designedly, in addressing cultivators of the soil; not because they are more in need of the admonition it conveys; on the contrary, it is because they are less exposed to offend against it than most other classes of men, and that, if we expect to reap a rich harvest, we must sow the seed in a soil well prepared and suited to its growth.

I understand the word honesty to include almost all the other virtues, such as truth, justice, prudence, industry, economy, love to our fellow men, and I think I may include a due regard for the brute creation, and even for the vegetable world.

Gratitude to the benevolent author of all,[1] makes it a duty in us to hold in high estimation all his valuable gifts, which must necessarily prompt us to cultivate and improve them according to our utmost abilities and lights of reason, given to us for no other purpose than to serve as our guide in our search for happiness. Although this is addressed to the cultivators of the soil particularly, it is by no means intended to deprive any other class of mankind of the benefits which may, perchance, be derived from its attentive perusal. Would to God that all men, and most particularly politicians and statesmen, had this maxim always before their eyes, and as it were deeply engraved in the minds! What glory would accrue to any government, that of the United States for instance; what power would it not possess![2] How honored by all the world, if it were entirely and exclusively governed by the purest means of honesty and truth! How glorious it would be for any government to have absolutely discarded from their diplomacy and intercourse with the world, at home and abroad, stratagem, intrigue, falsehood, rapacity and injustice; and be solely guided by the strictest principles of probity, truth, plain dealing and common sense! But I am forgetting that this is intended as an essay on improvements in agriculture.

It is conceived impracticable in a paper like this, to descend to particulars; for it would require many folio volumes to do justice to the subject. I shall attempt, then, nothing but general views, and throw out only hints on the various departments of agriculture. Every one can glean materials enough for his various operations, in books and other publications on rural concerns, and also from the dictates of plain reason, discarding, as much as possible, the prejudices of education, or rather of the want of it, and all practices founded on routine, inconsistent with plain sense.

A man ought to be very cautious in the selection of a spot on which he contemplates carrying on his agricultural operations, and on which he intends fixing his permanent residence. No man in his senses will hesitate in giving the preference, certeris paribus,[3] to rich and fertile land over that which is poor, and requires heavy expenses to render it even only moderately fertile. Fertility of soil, however, is not the only desirable thing for the cultivator. His land must possess many other requisites to render it fully worthy of his choice. It must be convenient to a market; for, of what use is abundance, be it ever so great, if it cannot be enjoyed and disposed of to advantage? The site ought to be pleasant, and most particularly it must be healthy. A man who without unavoidable necessity, resides on a sickly place, is deficient of honesty towards himself and his dependents, however he may be

1. Herbemont rarely makes confessional statements treating his religious convictions. He was a communicant of Trinity Episcopal Church in Columbia, S.C.

2. At a time when the followers of John C. Calhoun were advocating separation from the Union, Herbemont pointedly invokes the nation rather than the state. Like William Elliot, he was a southern Unionist.

3. With all things being the same.

otherwise towards others. Without health there is no happiness, particularly when sickness is the effect of our imprudence, covetousness, or any other unworthy motives. Fertility of soil is not, however, an inexhaustible property, and indolence or bad management will in a few years destroy the most desirable quality of land, and reduce it to the rank of that which is naturally sterile. The husbandman must, therefore, deal honestly with his land as well as with himself and neighbours. Always to take from it, and never to return to it any thing, by which its fertility may be not only kept up, but also augmented, is most undoubtedly unjust, illiberal, ruinous, and therefore, unworthy of an honest man. That fertility in land may be kept up and increased is undoubtedly true; for we occasionally see it on the farms of sensible and industrious men; but that it can be done, is proven beyond the possibility of doubt, by the increased fruitfulness of gardens and all the fields in Europe and elsewhere, some of which must have been in a state of cultivation, perhaps 2000 years or more. The unavoidable exhaustion of land by continued cultivation is, therefore, an absurdity the more easily detected that we have every day before our eyes indisputable proofs of it. The field of the slothful or the ignorant man is alone subject to the progressive deterioration always proportioned to his want of industry, or the extent of his ignorance. It cannot be denied that what is done on a small scale, such as a garden usually is, can be done by the same and proportionable means on any extent of ground. We find those means to be principally two:—1st. The application of manures, and the other the stirring of the soil often and to a proper depth, to which may be added as a powerful auxiliary, a judicious rotation of crops. Such being the means found successful, and no other ever having been found from which such permanent benefits have been derived as from these, they must be the objects of our utmost exertions. To obtain the best quality and the greatest quantity of manure, ought then to be the object of our utmost care and solicitude. Manures are of various kinds, and although generally advantageous in all kinds of land, they are not all by any means, every where equally suitable. Vegetable matter in a decomposing state, for example, although the very best of manures, is not applicable to such soils as are already over abundant in, or are chiefly composed of the same materials, such as the black soils of swamps, marshes and some bottom lands. Some of these would be much more benefited by a plentiful application of burnt clay, lime, dry and gravelly soil or even pure sand or clay, as the one or the other is deficient in either.

Manures, or substances for the improvement of land, are derived from the three kingdoms in nature, viz: the vegetable, the animal and the mineral. To know where each or either of them is most suitable for the purposes of the farmer, in each particular case, requires, however, some knowledge which we do not possess intuitively. God has created all the animated world with various degrees of sagacity. The brutes have been endowed with an unerring guide called instinct, with little or no power of improving or changing their habits or practices; but which suffices for

all their purposes. Man alone was endowed with reason, which is an improvable faculty, and which can only supply the place of instinct, when it is cultivated and exerted. But different from that faculty in the brutes, no limits have yet been found to the extent of its improvement. Reason unimproved, therefore, may be inferior to instinct, as it is liable to erroneous impressions and may lead its possessor to error as often as to truth. This shows the necessity of education and instruction, in agriculture as well as in any other business of life, and without them, man is left to grope in the dark, and exposed to apply injurious substances where he aims at beneficial results. This appears to me a sufficient answer to the few remaining cultivators of the soil who still object to all kinds of "book learning" in agriculture; and clearly shows, not merely the propriety, but even the necessity of establishing schools of agriculture where the principles by which it ought to be regulated,[4] may be taught scientifically, as well as practically; and that without such institutions, unless the same object may be effected by other means equally effectual, the knowledge and practice of agriculture must always remain a most imperfect and inefficient object; whereas it ought to be the most powerful and efficient in any country, and particularly in a country essentially agricultural, as the United States most undoubtedly are. This part of the subject being of the utmost importance to those states that are exclusively agricultural, I must beg to be permitted to illustrate it further by a familiar simile: what should we think of a mechanic, say a carpenter, who was under some necessity to continue the practice of this particular trade, who, instead of serving an apprenticeship to a good and skillful carpenter, or otherwise learn the principles and best practice of his art, should devote his sole attention and studies to the acquiring knowledge in any and every other art, science or learning, such as weaving, spinning, smithery, horology, latin, greek, botany, chemistry, &c., &c., knowledge by no means useless, even to him; but not directly applicable to the profession which, from the circumstances in which he is placed, and in the prosecution of which he ought to acquire skill, and aim at perfection? Any yet such is too truly the real state of things with our agricultural communities. If our various legislations ever bear at all upon agriculture, it is to oppress and degrade it; and the most anomalous and almost incredible fact is, that the very agricultural population of the country has an overwhelming majority of votes in the councils of the states, either singly or collectively, by which such laws are enacted! This fact which is staring with the most malicious sneer in every man's face, shows that we farmers act as *wisely* as the carpenter of my simile. Rouse yourselves, you cultivators of the soil, know that you are the strength of the world, and enable yourselves by a due degree of education and knowledge, to deserve, and

4. Beaufort's petition to the South Carolina Senate to establish an agriculture school had been rejected by the time of this essay's composition.

really to stand firmly on the proud eminence which is your birthright! Be honest to yourselves; for true honesty, like true charity, begins at home.

I will venture to assert positively, as my opinion, on the correctness of which I would risk my reputation of having common plain sense and honesty of purpose, that if these United States, or any individual State of them, were to adopt the most efficient means in their power to promote the most extended knowledge of agriculture, and the establishment of practices founded upon it; were it even to the entire neglect of three-fourths of their yearly enactments, that such a state of states would soon arrive to as high a degree of prosperity, wealth, virtue and happiness, as can well be expected ever to be the lot of man on earth. I can scarcely permit myself to listen to the maxim, "let us alone," which is not applicable in this; or in any other case, until man has acquired competent knowledge as the means of discrimination. Instruct man in the profession he is to follow as his occupation through life, and when that is fully, truly, and honestly done, leave him at full liberty to act according to the dictates of his judgment and feelings. Then indeed, "let him alone." It seems to me that we mistake completely the objects, or what ought to be truly the aims of governments. The principle of these ought most certainly to be, to lead man gradually; but by a sure and direct road to the attainment of all that is truly desirable, and that is knowledge, which will conduct him safely to honesty and all the virtues of a patriotic citizen.

It cannot be expected that in a limited essay as this must necessarily be, rules can be given for the improvement of all sorts of soils, under all sorts of circumstances. I shall therefore sum up this part of the subject, by recommending to the proprietor and cultivator of any land, rich or poor, to manure it, if possible, from the very first of its being brought to cultivation, by every means in his power, and according to the best knowledge he may possess, or collect from his neighbours; and also to plough, or otherwise stir up his soil, not by mere scratching, but as deeply as the nature of his land will admit, being assured that, generally speaking, there is more danger in ploughing too shallow than too deep. I cannot, however, enter into the particular cases where it may be otherwise.

To him who is compelled, by circumstances that are not within his control, to cultivate land that is naturally poor; I must express my assurance of fellow feelings for his unfortunate situation; but yet it is not desperate, and, if he possess knowledge, he ought to labour to bring his barren soil to a state of fertility. The free use of the plough, of draining where it is wanted, the frequently sacrificing a green crop to the improvement of his land by ploughing it under, the free use of lime and gypsum, where these can be obtained at no exorbitant rates, the adding sand to clay soils, and clay to sandy soils, and incorporating them well by repeated ploughings and harrowings, are the most obvious means by which he is likely to be rewarded with success. In either case, however, the cultivator must adapt the objects of his culture to the nature and capacity of his land. It is vain to expect ever to obtain a

good crop of a certain article which the land, from its constituent principles, is not suited to produce. This part of the subject requires experience and sagacity, as well as practical honesty; for the steward ought not to be made to account for more than is given to him in charge.

It would be worse than idle in any man to attempt any thing without first providing himself with the means and the instruments most suitable to effect his purpose. A farmer, therefore, must have cattle, horses, mules or oxen for the service of his farm. Let him keep in mind, that there is no economy in having cheap animals, by which is generally understood worthless ones. The cheapest article is not that for which the least money is paid; but that which when obtained, can most fully answer the purpose for which it was purchased. In the use of these our humblest dependents, we must keep in mind our motto. These most useful auxiliaries to all our labours ought to be treated with gentleness, and I was going to say with liberality; but, no, I must say, with justice. Since we deprive them of their liberty, and force them to exert their strength in our service, it is but common honesty towards them that we feed them well, and in every respect do every thing for them that may tend, not merely to their health; but also to their comforts and well being. In this it is most evident that "honesty is the best policy." The man that ill uses and starves the poor slave that toils for him, is unworthy his station among men; he is below his victim.

What has been said in relation to the labouring cattle on a farm, is equally applicable to the cares necessary, first in procuring all the implements and instruments of agriculture, and in the due care taken of them, except that as these are not endowed with feelings, we may be governed towards them simply with a view to our interest. The best and most effective instruments ought to be obtained, the cost of them is only a secondary object, for it frequently happens that the difference in price; between an indifferent instrument, a plough for instance, and that given for a highly improved one, is more than fully made up by the superiority of its effects, and also the price it costs is an additional inducement for the farmer to take due care of it, which, however, he ought to do at any rate, and in regard to all the implements he has to use. I would say to a farmer, or any other man: if you use only a simple stick, deal honestly with it; do not impose on it a greater burden than it can bear, and when you have done with it for the present, put it away in a safe and secure place where it may not be exposed to the rain and the sun, and it will reward you, by the duration of its services, for the trifling cares you have bestowed upon it. Even by this trifle, then, the truth of my epigraphe is proven.

When you walk through a farm and see the wagons, carts, ploughs, harrows, hoes, spades, axes, &c. &c., lying about any where and every where but under a suitable cover, you need not go into the dwelling house and barns of the farmer, to ascertain the extent of the abundance and comforts he enjoys. What you have seen is enough.

I have then, Mr. Editor, as briefly as I could, endeavoured to make out the truth of the old adage I have chosen for the epigraphe to this imperfect attempt at writing an essay on agricultural improvements. I am fully aware that it contains nothing but hints, and these probably very inadequately expressed; but, sir, I most certainly think that some of them deserve the most serious consideration of all that truly and honestly love their country. If it be found that in these particulars my views are just; then a great revolution in our rural affairs is wanted, and the exertions of all honest men; and particularly of the cultivators of the soil must be put in requisition to effect it. The talents of the country are claimed by the necessity of using all due efforts to attain so great an object. The best exhibition of patriotism must be that which has for its object the greatest good of the country, the honesty and consequent happiness of its inhabitants.

On the Moral Discipline and Treatment of Slaves.

Read before the Society for the Advancement of Education at Columbia.

February 1836

In 1829 Charles Cotesworth Pinckney (not the Revolutionary founder, but the planter and lieutenant governor of South Carolina from 1832 to 1834) requested that missionaries of the Methodist Church evangelize his slaves. Under the leadership of William Capers, the Methodists began a slave mission that spread from South Carolina to neighboring states.[1] A component of this mission was the dispatching of African American preachers to witness to the slaves, a prohibited action. Pinckney supplied a rationale for the mission to his fellow planters in *An Address Delivered in Charleston before the Agricultural Society of South Carolina at Its Anniversary Meeting*: "Nothing is better calculated to render man satisfied with his destiny in this world than a conviction that its hardships and trials are as transitory as its honors and enjoyments."[2] The goal of rendering slaves more tractable and content persuaded numbers of his auditors, and the 1830s saw many planters welcome the Methodist mission onto the plantations. The Methodists, for their part, were much more concerned with saving souls than instilling docility in their hearers.

Herbemont stood among the skeptics of the initiative, believing that a religion that required one to conceive oneself as a vile sinner as a precondition to conversion was scarcely suited to securing the happiness of its adherents. Nor could he imagine the proliferation of African American preachers on the landscape as portending anything other than the spread of dissension and mischief. By 1835 Herbemont had become resigned to the fact that the ruling class of his state would not move toward the dissolution of slavery. Failing universal

1. Donald G. Mathews, "The Methodist Mission to the Slaves, 1829–1844," *Religion and Slavery*, ed. Paul Finkelman (New York: Garland, 1989), 615–31.

2. Charles Cotesworth Pinckney, *An Address Delivered in Charleston before the Agricultural Society of South Carolina at Its Anniversary Meeting* (Charleston, 1829), 10–14.

manumission, Herbemont believed that humanity dictated that planters must act to maximize the happiness of enslaved African Americans. He conceived that the clearest path to such happiness lay not in perpetual prayer meetings but in reconstituting elements of traditional African culture on the plantation—by permitting slaves their music, dance, and other expressive folkways. The circumstances of this essay's production were curious. Herbemont had proven the most industrious of the early members of the Society for the Advancement of Learning. The committee empanelled to produce a report on the treatment of slaves had failed to compose their document. Herbemont was added, but his views apparently were so individual that he chose to present them without the consent of the committee chair. Published in *Southern Agriculturist* 8, no. 2 (February 1836): 70–75.

Having been added to the Committee, appointed to present a memoir on the moral discipline and treatment of slaves, in this State, I made inquiries in different parts of the country, as much as my impaired state of health permitted, and I conversed with several gentlemen for the purpose of acquiring information on the subject thus committed to my charge. The Chairman of the Committee being absent from Columbia, in a distant part of the State, I must avail myself of the permission granted us to write either jointly or severally, and I take the latter alternative as the most convenient, under existing circumstances.

It is a matter of great regret that I was unable to make my inquiries as numerous, as was desirable, and that those made have been considered very partially. Indeed, I have reason to conclude, that there are very few planters who have any thing like a regular system for either the moral or physical government of their slaves. I shall only mention the fullest and most strongly marked account given me by one of my correspondents.[3]

He tells me that when he commenced planting, a few years since, he found the plantation which he had inherited from his father, and to which he had added very considerably, both in land and Negroes, in an exceedingly disordered state; or, to use his own strong expression; "found it a wreck in every way." He found his Negroes, to all appearance, devout religionists. Their practice was to congregate twice a week, besides Sunday mornings.[4] From the inquiries he made of his overseers and neighbours, he had many reasons to believe, that no good arose from this course: but on the contrary, that all the most zealous pretenders to religion were the greatest rogues. He attended several of their meetings, and from their most absurd perversions of the scriptures, and the monstrous absurdities which they uttered, with the most sanctimonious countenance, he was most fully

3. There is no way to determine whether this exemplary correspondent was a fiction or an actual personage.

4. While most Reformed Christian congregations promoted a midweek prayer meeting in the early nineteenth century, one attribute of the Methodists was to form classes and gatherings to meet frequently on days besides the Sabbath.

satisfied that no morality could proceed from these meetings. He afterwards found that they committed depredations of all kinds, killing his beeves, hogs and sheep, thrashing his rice in the woods, breaking corn and grubbing his potatoes. He ascertained by the fullest and clearest proofs, that the coloured preachers were the greatest and most active thieves. He also found that among the women, those who had the most pretensions to religion, were nearly all implicated in the misdeeds. He was, therefore, induced to break up all their religious meetings, and to make examples by severe punishment on the most guilty ones. Punishment also followed any violation of his new regulations. He then resorted to a very different course, and adopted a system calculated to produce cheerfulness, and keep them in good humour as much as possible. Being determined that there should be no fault on his part, he fed and clothed them well, and induced them to occasional meetings for the purpose of merriment. He had fiddles and drums for their use, promoted dancing, and he found that by punishing certainly, though moderately, all ascertained delinquencies, they became much better tempered, and certainly much more honest. He has now followed this course for some years to his full satisfaction, and I am informed by his neighbours that his plantation is one of the best regulated, and his Negroes the most orderly in all that part of the country.

I shall not presume to say, whether or not this gentleman has followed the best practicable plan; but his success certainly indicates that it has some very favourable features.

If all men were enjoined to love one another and to contribute, as much as possible to the happiness of others; how much more is it the duty of men who hold such command over others, as we do our slaves. It is then indisputably our most imperious duty to treat and govern them with a view to their comfort and happiness, as is consistent with propriety, and the performance of their duties towards us. We must, therefore, insist upon their due performance of those duties; otherwise, we cannot have it in our power to place them in that situation which it is desirable for both parties that they should enjoy. If one course of conduct, therefore, is shown to be injurious, either by leading the slaves into mischiefs or otherwise, it should be changed unhesitatingly. But, in doing this we should most sedulously guard against the adapting of another cause that may contain features equally injurious; and this is the great difficulty.

The system of moral discipline and management of slaves, slightly hinted at by the Chairman of the Committee,[5] at the preceding meeting, as having been tried with some success by some gentlemen of the South, seems to conflict with the successful method adapted by my correspondent, and, without doubting the accuracy

5. William Harper, who would give a powerful endorsement of the slave system in his *Anniversary Oration before the South Carolina Society for the Advancement of Learning* (Washington, D.C.: Duff Green, 1836). Most sources incorrectly give this oration's date as 1838.

of either account, it appears to me, there is some imperfection in both. Those gentlemen at the South who have hired white persons to preach to their slaves every Sunday, teach them morality and the principles of religion, have so far done very well, and the plan, so far as it goes, is highly commendable; but it appears to me insufficient, in as much as it gives moral occupation only once a week, whereas man, particularly the ignorant, requires it oftener and of various kinds.

Innocent amusement, when under proper regulations, and when partaken of with moderation, conduce to morality and virtue. Cheerfulness is the fruitful parent of charity and good feeling towards our neighbours, as moroseness, the first born of fanaticism, is that of hatred and malice, and all uncharitableness. Negroes are naturally prone to gaiety, and I conceive it a duty to ourselves as well as to them, not to change this inclination in them, but rather to promote it by every prudent and allowable means.

Man, though in a state of ignorance, has some activity of mind as well as of body. Curb it, and you render the individual miserable. This is the reason that solitary confinement is the most severe punishment short of death. Compel the ignorant man to retire invariably to his own dwelling as soon as he has done his day's work, and you proportionably deduct from his happiness, by compelling him to brood over his miserable fate; whilst he sees others in a more fortunate condition, enjoy themselves to satiety. Allow him on the other hand, some recreation, he is contented and sees not with envy the happiness of others. There never was, perhaps, a more happy, contented, honest, religious and moral people than the peasantry of the continent of Europe. I speak more particularly of the peasantry of France before the revolution. Their habitual cheerfulness and good feelings which it promotes, were most probably the chief cause of it. They were, most of them, very poor; but they had access to social pleasures, which gave them a love for that society where they found a diversion and relaxation from their labours, and, to love one another is the first duty towards men enjoined upon us. It also gave them gratitude towards their superiors who promoted, most judiciously, those social enjoyments. How often have I enjoyed the happiness of seeing crowds of happy people at their most innocent amusements on a Sunday evening, by daylight, after the church service was over! Then in the public square the village, the youths of both sexes were assembled in the shade of the trees, where they danced, undoubtedly with all the innocency possible. Their parents and elders were present and enjoyed their happiness. Often have I seen the clergymen, of whose piety and eminent virtues none could doubt, present on these occasions, joining with the parents and elders in the lively, but pure conversation excited by the sympathy we all feel witnessing the happiness of others. Is there, can there be guilt in this? No! impossible; for that which produces all the feelings of love and charity to all men, cannot be guilt.

The nature of man is alike every where, and at all times; and if those who used to follow the abominable slave trade, found it to their advantage, whenever they had an opportunity of doing so, to produce gaiety in their miserable captives, by causing them to listen to and dance to the sound of some instrument, there must be some virtue in the practice; or else, in their cupidity, they never would have thought of this. They, however, thought of it, and moreover, found that it saved the lives of many of their dependent captives. Some practice somewhat similar to that which is here advocated, prevails more or less all over the world. It must, therefore, have been found useful. If, then, it is not found culpable, why should it not be more generally adapted in this country for the comfort and pleasure of our slaves? From what has been said above, there are reasons to believe, that the practice, by promoting cheerfulness and amusing occupation, the slave would become more honest and much more seldom attempted to rob and pilfer, not only his master's, but frequently his neighbour's fields.

It is not alone the advantage of obtaining a desirable object that induces the Negro to steal; but rather the excitement produced by the very act of stealing. This gives more activity to his mind, and therefore, gives him more life, or rather a more thorough sentiment of his existence. Change, then, the object of his pursuits, give him innocent pleasures that may occupy his mind and may be anticipated with eagerness, and let him consider them as the reward of his good conduct, and you will have your negro honest and trustworthy; though, perhaps, not from principle. It is not easy, and may be impossible to implant principles in the minds of the ignorant; and to substitute knowledge for ignorance in a sufficient degree to be available in good, is still more difficult. Gentlemen may think it beneath their dignity to interfere in any manner whatsoever with the pleasures and amusements of their slaves. It never was thought below the dignity of the sovereign, of the legislator, or of the magistrate to direct the conduct of their subjects or citizens in every thing that may lead to their general good; and if the path that leads to it is a path of pleasantness, it is much more likely to be followed willingly, than if it were covered with thorns and briars. Nothing of this sort can be below the attention of any man. What can more exalt the character and standing of a man than to promote and spread widely happiness, not only amongst his own dependents, but also, by his good example, through his neighborhood? Can any thing produce a more happy consciousness in a good man than the knowledge that he has by his exertions, advanced the welfare and happiness of his fellow creatures? His conscience will tell him that he has done his duty, and the last moments of his life will be sweetened by the thought.

N. HERBEMONT

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Bibliographical Essay

Nicholas Herbemont understood himself to be a useful citizen of the republic of letters. He participated in both its institutional life—involved in the committees, societies, and commissions that generated information and conversation—and its life on paper, in manuscript and in print. He cherished the sociable exchange of opinions and experiences. Tolerant, energetic, and committed to the process of debating matters of public interest, Herbemont was the ideal committee chairman. Repeatedly over the course of his life his peers deferred to his lead in a host of organizations. Within a year of his appointment to the South Carolina Board of Public Works, he was elected chairman in 1821.[1] Upon the formation of the Agricultural Society of South Carolina, he served as its first chair. In 1835 he joined with twelve other citizens to form the South Carolina Society for the Advancement of Learning and the Diffusion of Knowledge. He headed its most active component, the Agricultural Committee. He was elected president of the Regents of the Lunatic Asylum. A public-spirited man, he chose to join bodies than enabled him to perform beneficial actions to his community. Herbemont left a rich paper trail.

The personal papers of numbers of southern planters contain manuscript letters from Herbemont on a variety of topics. His private archive, including his vineyard records, letter books, and private library, however, cannot now be located. His will, composed while he declined toward death over summer 1838, bestowed the bulk of his estate to his French grandson, Paul Bofill. Bofill's whereabouts and history remain mysteries. Herbemont gave his vineyard at Palmyra and his gold medal and certificate of commendation from the South Carolina Agricultural Society to his best friend, lawyer William F. DeSaussure (1792–1879),[2] who would in 1852 become U.S. Senator from South Carolina. The exact location of Palmyra cannot now be determined because of the burning of the early Richland County deed books in the Civil War, and the medal has passed out of memory among the DeSaussures, who remain an influential family in the state. The loss of his personal belongings, however, may be a matter of minor consequence. The viticulture books in his library can be adduced by the many citations in his published writings. The most significant of his letters to private individuals he forwarded to the agricultural press for publication, or they were supplied to journals by their recipients.

Nicholas Herbemont had precise understandings of the literary world he inhabited and his role in it. In 1833 he offered his "Observation on the Interchange of Opinions among Planters":

> The objects of Agricultural Societies is to afford their members opportunities of meeting together, and discussing those matters which concern essentially the success and welfare of the whole. That of agricultural publication, journals, &c. must necessarily be that of diffusing more extensively the particulars of *their* experience, practices and improvements; thereby furnishing a mass of knowledge by which the whole community is necessarily benefited, and they themselves (the planters and farmers) more directly and particularly so. Their daily avocation, and the distance at which they live from one another, makes it impracticable for them to meet and discuss their interest as frequently as would be desirable and beneficial; but an interchange of their views, through the medium of a public journal, is certainly the next best, if not the very best mode of communicating with each other, and indeed, under the circumstances, it is the only practical mode in which it can be done to any advantage; for private correspondence is too circumscribed to have any but a very partial effect. Although it is very desirable to have very well written essays on the various branches of the science and art of agriculture, the less labored, either in style or matter, the plain statements of fact or of speculation . . . is probably likely to do as much, if not more, than highly polished and learned discussions of highly gifted scientific men. A plain colloquial style is intelligible to all, and is in ordinary cases perfectly sufficient to communicate to the agricultural public, the improvement, discoveries, of beneficial practices in which they all feel an interest. (*Southern Agriculturist* 5, no. 7 [July 1833])

Herbemont's meditation explains much about the character and style of his publications. His colloquial letters and reports outnumbered his essays. The essays and treatises were invariably occasioned by (1) the need to address a society or association concerning generalities of agricultural practice,[3] or (2) the requests of agricultural journal editors to supply a systematic account of a topic. Even when engaged in such systematic accounts, Herbemont employed a transparent style, avoiding the specialized jargon of scientific savants. The one aspect of scientific discourse he approved—Linnaean nomenclature in the naming of botanical and biological entities—he commended because it clarified the confusion of vernacular names for things.

Herbemont preferred agricultural periodicals as the print medium for his communications. Early in his literary career, he had ventured into the print market with a pamphlet, *Observations Suggested by the Recent Occurrences in Charleston* (Columbia: State Gazette Office, 1822), and discovered that few would pay to be edified on a given topic; he gave away much of the print run, including a copy to Thomas Jefferson. Thereafter, he wrote for the agrarian press. Herbemont believed that agriculture comprised a body of knowledge expanding so rapidly and a practice altering so quickly that books summarizing agricultural science suffered immediate obsolescence. Even texts engaged in the primary education of a readership in a field—such as John Adlum's *Memoir* or John James Dufour's *American Vinedresser's Guide*—were superseded by instructions published in the agricultural press within a year or two of their publication. (The predilection for journal publication—electronic

rather than print—remains a defining feature of scientific communication.) Herbemont closely identified with the communities inscribed in agricultural journals, the networks of contributors, correspondents, and reviewers. No subscription list printed in the front matter of a book evoked the sense of shared concern and collaborative work found in every issue of an important agricultural magazine.

While Herbemont's preference for publishing in agricultural journals over books is readily intelligible, given his mental investment in belonging to a scientific community, his preference for publishing in journals rather than newspapers is more difficult to fathom. Herbemont appeared rarely in South Carolina newspapers of the 1810s–1830s. He very occasionally published notices of the availability of vine cuttings in the *Columbia (S.C.) Telescope*. It took a dire public calamity, such as the appearance of the boll weevil, to elicit the sort of helpful comment given so readily in the agricultural press. One can only speculate about the reasons for his reticence. Perhaps the pronounced party spirit that drove the papers offended Herbemont. Or perhaps he believed that the local populace was a less suitable readership than the larger world of scientific and practical men reading journals for the sorts of information he dispensed. Whatever the reason, Herbemont's literary energies were directed at the world of agricultural magazines, not to the organs of journalism.

Herbemont regularly sought publication in three journals during his lifetime: the *American Farmer*, published in Baltimore; the *Southern Agriculturist*, published in Charleston; and the *Farmers' Register*, published in Petersburg, Virginia. His correspondence appeared with a seasonal rhythm—the preponderance being written in March at the outset of the season; in September, after the grapes had been pressed and casked; and November, after the fall vegetables and grains had been harvested. While these contributions were widely reprinted in the agricultural press and even in newspapers, he couched his writings specifically for the distinct editorial concerns and reader interests of these three journals. Their signal features deserve exploration.

The *American Farmer* was published weekly in Baltimore, first under the editorship of John S. Skinner, later under the editorship of Gideon B. Smith. The journal commenced publication on April 2, 1819 (vol. 1, no. 1) and ceased March 7, 1834 (vol. 15, no. 52). The first specialized periodical devoted to agriculture, it projected a national readership and concerned itself with issues of political economy as much as the practices of cultivation, perhaps because Skinner had been trained as a lawyer.[4] An agricultural reformer, Skinner echoed the concerns first aired by John Randolph in *Arator* (1814) that the soil in southern states was losing fertility. The journal promoted crop diversification and campaigned for the establishment of agricultural schools. Skinner and his successor, Smith, had a decided taste in agricultural instruction, and repeatedly petitioned correspondents for the ABC's of a practice. From 1823 to 1827 Skinner repeatedly featured the writings of fellow Marylander John Adlum on grape growing and wine cultivation. Shortly before 1828, Herbemont supplanted Adlum as the journal's chief oracle on viticulture.

If the *American Farmer* projected a national scope, the *Southern Agriculturist* came into being in response to the political crisis that gave the South its sectional identity, the

Tariff of 1828. There was something paradoxical about a group of polities that had long espoused state's rights, and reveled in individual identity, banding together to form a corporate entity, "the South," and claiming for it distinctive cultural and political traits. The title yoked the new identity with what was conceived to be the characteristic citizen of the region. Published monthly in Charleston beginning January 1, 1828 (vol. 1, no. 1), under the editorship of John D. Legaré, the contents presumed a situation of crisis—an overinvestment of resources in staple monocultures, a declining fertility of soil, a lack of agricultural education, the out-migration of white farmers to the southwest territories, and a political state of affairs designed to aggravate the region's woes.[5] Herbemont contributed greatly to the journal's founding and served as chief contributor in its initial year of publication. While Herbemont proposed the spread of viticulture as his primary remedy to the state's and region's crises, he also addressed the other dimensions of the problem, particularly the question of soil fertility. When C. G. Carrol assumed editorship of the journal in January 1835, Herbemont continued to contribute pieces, particularly those with pertinence specifically to conditions in South Carolina. Despite its monthly cycle of issue, the journal often suffered from a paucity of original, regional material, so it engaged in extensive reprinting of pieces from the periodical world. It ceased publication in 1839, after Herbemont's death. It recommenced publication in 1841 with a series that lasted into 1846.

The *Farmers' Register, a Monthly Publication Devoted to the Improvement of the Practice, and Support of the Interests of Agriculture* began publication in 1833 under the brilliant and volatile editorship of Edmund Ruffin, shortly after he had published the enormously influential *An Essay on Calcareous Manures* (1832, followed by four subsequent editions before the Civil War).[6] Printed in Richmond and edited at "Shell-Banks," Virginia, the periodical elaborated Ruffin's interest in the problem of fertility, arguing that marl and crop rotation were the dual means to counter soil exhaustion, particularly in cotton and tobacco lands. Herbemont responded sympathetically to Ruffin's activist engagement with problems and supported his solutions. Herbemont demonstrated his interest by contributing regularly to the journal during the last years of his life. Herbemont particularly admired the turnaround that Ruffin engineered in Virginia's agricultural productivity during the 1830s and thought the editor a great man, despite his radical attitudes toward banking, his overt and offensive racism, and his strident political partisanship. The journal continued to be printed until 1842, when Ruffin's views on banking forfeited a substantial part of his readership.

These journals practiced the republication of the contents of work published in other periodicals.[7] Herbemont's writings on the vine frequently underwent this duplication, with the only alterations of text being the excision of prefatory or concluding remarks specifically addressed to the editor of a particular journal and the correction of obvious spelling or typographical errors. The author never revised or altered any of his compositions after initial publication. While Herbemont's publications invariably had one of this trio of periodicals as its intended venue of appearance, they spread out into the larger world of print, being reprinted in other organs of agricultural journalism such as the *Genesee Farmer* or the *New England Farmer*. While such reissues have an interest in charting the reception of

Herbemont's work, they do not bear on their textual character and are ignored in the preparation of the texts presented in this volume. Here the first iteration in print of a writing has been used as the basis for editing. Herbemont's characteristic habits of spelling and punctuation—the English *-our* rather than the American *-or*, in "colouring," for instance, or the interpolation of "etc., etc."—have been preserved. Obvious spelling and typographical errors in the original have been silently corrected, as they were in contemporary reprintings. The titles given to the pieces upon publication were of two sorts: those supplied by Herbemont himself, and generic characterizations of a letter's contents supplied by editors for the quick reference of their readership. Herbemont's titles—found in his treatises, speeches given before associations, and replies to another person's remarks, have been retained verbatim in the heading used here to characterize the contents of a piece. As for editorial headings, because they frequently were unhelpfully general—"culture of the grape"—I have specified certain editorially designated writings (usually letters) more elaborately in the naming and listing of contents; the editorial title is, however, retained in the presentation of the text.

Herbemont's writings have been arranged chronologically by his provided date of composition within the three sections found here: Treatises (his summary statements upon viticulture), Published Letters on Grape Growing and Wine Making (letters, speeches, and memorials published in the agricultural press), and Agrarian Essays (major printed statements of Herbemont's agrarian philosophy not bearing directly on viticulture). A farmer habituated to the time consciousness imposed by almanacs, Herbemont dated every product of his pen that saw print. Usually editors printed his communications quickly (within two months of receipt), but on a very few occasions, a piece was consigned to a drawer until a slack season for submissions. In the headnotes to individual writings I comment upon the circumstances of publication, the context of the discussion, and the reception of Herbemont's ideas. The annotations supply the sources for ideas or quotations under discussion, persons named in the writings, obscure points of agricultural or wine-making doctrine, or identifications of grape varieties or wine types that are rare or have undergone redesignation over the past two centuries. Herbemont wrote plainly for the understanding of practicing farmers as well as scientific investigators, so matters that upon first acquaintance may seem intangible or difficult, over the course of a writing or a series of writings receive elucidation. I do not anticipate Herbemont's clarifications in my notes.

Herbemont wrote profusely in the last two decades of his life on a wide variety of subjects. Numerous reports of the Board of Public Works of South Carolina for the 1820s bear the hallmarks of Herbemont's style, as do certain reports concerning the South Carolina lunatic asylum found in the South Carolina Legislative Papers collections for the mid-1830s.[8] I have chosen not to reproduce this official literature here. Nor is every communication he published in the agricultural press germane to a collection exploring his contributions to viticulture and antebellum agrarian philosophy. To supply a general sense of the breadth of Herbemont's concerns projected in the print world of antebellum American agriculture, this bibliographical rumination concludes with a listing of those of his publications not collected in this volume.

Letter on the Organization of the South Carolina Agricultural Society. January 7, 1819. *American Farmer* 1 (1820), 354–56.

"Communicated for the Telescope" (on a method for destroying weevils). June 18, 1821. *American Farmer* 3 (1821), 119–20.

"Cherokee Rose." June 5, 1821. *American Farmer* 3 (1821), 126.

"Millet." June 5, 1822. *American Farmer* 4, no. 14 (June 28, 1822), 103–4.

"On Artificial Grasses." September 8, 1828. *Southern Agriculturist* 1, no. 12 (December 1828), 549–51.

"On the Fecula of the Sweet-Potatoe, and the Chickasaw Pea." March 9, 1829. *Southern Agriculturist* 2, no. 9 (September 1829), 408–10.

"On the Cultivation of the Chickasaw Pea, and Bonavista Bean." November 30, 1829. *Southern Agriculturist* 3, no. 2 (February 1830), 75–76.

"Grapes of the Second Growth." December 24, 1830 *American Farmer* 12, no. 43 (January 7, 1831), 342.

"Observations on the Profit Attending the Culture of Grapes." November 3, 1832. *Southern Agriculturist* 6, no. 4 (April 1833), 157–58.

"Gama Grass. July 15, the 1833." *Farmers' Register* 1, no. 5 (September 1833), 216.

"Notice of New and Valuable Indigenous Grass, (Leersia Orizoides) by N. Herbemont." November 23, 1833. *Southern Agriculturist* 5, no. 11 (January 1833), 12–14.

"On Manures from Coal, and the Turf of Salt Marshes." November 21, 1833. *Farmers' Register* 1, no. 9 (February 1834), 541–42.

"Florida Coffee, neither Okra nor Coffee." April 10, 1835. *Farmers' Register* 2, no. 12 (May 1835), 765.

"Chickasaw Pea—Pea Fodder." May 11, 1835. *Farmers' Register* 3, no. 1 (June 1835), 93–94.

"On Emigration to the Western Country." April 11, 1835. *Southern Agriculturist* 8, no. 5 (May 1835), 243–45.

"'Vin Muet,' or Dumb Wine." *Farmers' Register* 3, no. 4 (August 1835), 227.

"Tunicata Corn." September 26, 1835. *Farmers' Register* 3, no. 7 (November 1835), 448.

"Extract of a Letter from N. Herbemont, Esq. to Gideon B. Smith." September 25, 1835. *Farmers' Register* 3, no. 7 (November 1835), 423.

"On the Use of Pise in Constructing Houses and Fences." September 1, 1835. *Farmers' Register* 3, no. 8 (December 1835), 490–92.

"On Manures." *Southern Agriculturist* 9, no. 1 (January 1836), 7–18.

"Pise versus Mud Walls." July 30, 1836. *Farmers' Register* 4, no. 5 (September 1836), 289–90.

"Remarks on the Uses, Value, and Culture of Sweet Potatoes." January 5, 1837. *Farmers' Register* 5, no. 10 (February 1837), 621–22.

Translation of Jules Pagezy, "On the Influence of Burnt Earth on the Quantity of Spirits in Wine." *Southern Agriculturist* 9, no. 7 (July 1837), 346–49. Originally published in the *Journal de Connaissances Usuelles et Pratiques.*

"Observations in Reply to an 'Upper Country Recluse' with an Account of an Extraordinary Production of Grapes and Wine." September 9, 1837. *Southern Agriculturist* 10, no. 10 (October 1837), 515–19.

Notes

1. See South Carolina Legislative Papers: "Nicholas Herbemont, President of the Board of Public Works, Letter to the Legislature Submitting the plan of the Country between Savannah River and Bees Creek, with Robert Mills' Report on the Same." MS. Series S165029, item 9, December 12, 1821. South Carolina State Archives.

2. DeSaussure would serve as U.S. Senator briefly in 1852–53. In his latter years he sat on the governing board of the College of South Carolina.

3. For the rhetorical attributes of the agricultural address, see Drew Gilpin Faust, "The Rhetoric and Ritual of Agriculture in Antebellum South Carolina," *Journal of Southern History* (1979), 541–68.

4. Avery O. Craven, "The Agricultural Reformers of the Ante-Bellum South," *American Historical Review* (1928), 308–9; Kristina Boone, Terry Meisenbach, and Mark Tucker, *Agricultural Communications: Changes and Challenges* ([city?]: Blackwell, 2000), 7.

5. Faust, "Rhetoric and Ritual," 548–57.

6. Jack Temple Kirby, *Nature's Management: Writings on Landscape and Reform, 1822–1859*, by Edmund Ruffin (Athens: University of Georgia Press, 2000). See also Kirby's *Poquosin: A Study in Rural Landscape and Society* (Chapel Hill: University of North Carolina Press, 1995).

7. See Meredith McGill, *American Literature and the Culture of Reprinting, 1834–1853* (Philadelphia: University of Pennsylvania Press, 2003).

8. For instance, "Report . . . on Portions of the Governor's Message Relative to Internal Improvements," 1821. Ser: S165005, Item 00164; "Report Concerning the Correction of the Map of the State," 1821 Ser: S165029, Item 00031; "Letter to the Legislature Submitting the Plan of the Country between Savannah River and Bees Creek," 1821 Ser: S165029, Item 00009; "Detailed Report on Funds Expended for Public Improvements," 1822 Ser: S165029, Item 00013; "Report on the Petition of Josiah Callahan Respecting Payment for Milestones," 1822 Ser: S165029, Item 00008; "Committee on the Asylum and . . . Two Copies of the Report of the Regents of the Lunatic Asylum," 1836 Ser. S165005, Item 00207.

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Index

"Address to the President and Members of the United Agricultural Society" (Herbemont), 261–67
Adlum, John, 1, 6, 12, 14–15, 124, 127, 149, 154, 167; *Memoir on the Cultivation of the Vine*, 6, 282
African Americans, 16–17, 251–60, 275–79. *See also* Slavery
Agrarian ethics, 3–4, 15–18, 20–21, 261–67, 268–74
Agricultors. *See* Farmers
Agricultural reform, 2–4; resistance of planters to, 8; in the South, 3, 8, 15–16
Agricultural societies, 150, 182, 264–66, 281–82
Agricultural Society of South Carolina, 2, 4, 109, 130–34, 167–71, 267, 281. *See also* South Carolina Agricultural Society
Alabama, 144, 183
Alcohol content, of wine, 1, 184–85
American Farmer, 86, 109, 113, 124, 131, 144, 172, 183, 195, 227; begins publication, 109; changes editors, 141; essay contest in, 268; Herbemont corrects articles in, 117, 119; Herbemont's Madeira in, 201–2; Herbemont's regular contributions to, 14–15, 283; McCall writes for, 117, 124; publishes on viticulture, 1; reprints Herbemont's tract, 252
American Gardener, 49–50
American Vine-Dresser's Guide, The (Dufour), 6, 12, 68–71, 80, 192n4, 282
Amerine, Maynard, 11
Animals, 123, 251, 256–57, 260, 264, 273
Areometer. *See* Beume's areometer
Armistead, W. R., 189

Beume's areometer, 83–84, 98, 125, 164, 185, 207
Beverly, Robert, 5
Birds, 66–67, 93, 147, 157, 204, 211–12
Black rot, 2, 5, 7, 66–67, 122, 162, 168–69, 179, 197, 203–5, 216–17
Bofill, Paul, 281
Bosc d'Antic, Louis-Augustin Guillaume, 39, 114, 163
Bottling, 104, 116, 142
Brandy, as additive to wine, 1, 83, 103, 115, 128, 155–56, 162, 184–85, 187
Brun-Chappuis, 117
Burgundy, 233, 235
Busby, James, 232

Calhoun, John C., 18, 20
Capitalism, 16
Caprification, 205
Casks, 74, 77–78, 96–97, 99–100, 127, 155, 163, 186, 241
Catawba wine, 3, 11–12, 149
Cattle, 264, 273
Cellars, 83, 104, 115, 152, 162, 239
Champagne, 9, 76, 82–83, 100, 104, 115, 154, 233, 235–37
Chaptal, Jean-Antoine-Claude, 167
Cicero, 58–59
Clarke, George J. F., 8, 176–81, 193, 196–97, 214
Climate. *See* Weather

Cobbett, William, 49–50
Columbia, S.C., 2, 9, 114, 201, 251
Columbia Telescope, 9, 283
Columella, Lucius Iunios Moderatus, 60
Cork, 150, 181–82
Corn, 242
Cotton, 71; planters, 8, 17–20, 158, 183
Coulure, 208, 217
Cours complet d'agriculture (Rosier), 56, 257
Coxe, William, 157, 189
Crop diversification, 16, 259
Crop rotation, 23, 48
Culling grapes, for crush, 10, 75, 97, 125, 185
Cuttings, 48, 52–56, 61–64, 109, 111–12, 119–20, 153, 155, 198–99, 220; and grafting, 161; preserving, 158–59, 191–92; sharing of, 151, 164, 247; support for, 61, 64–66, 120, 198

Davie, Allen Jones, 161–62
Davis, John, 6, 9, 14, 24, 204, 208–9
De Bernéaud, Thiébaut, 98
De Kerblay, Le Quino, 43
Delicacy, in wine, 1, 86–87, 100
Delisle, Guillaume, 233
Della Torre, Antonio, 130, 135
Depopulation, 22–23
DeSaussure, William F., 261, 281
De Schweinitz, Lewis David, 213
Distillation, 81, 115, 184
Dogs, 256
Dorchester, S.C., 142
Downing, A. J., 14
Drought, 55, 90, 111, 122, 158, 188, 217
Drunkenness, 41, 128, 226
Dubroca, Jean-Louis, 9, 16–17
Dufour, John James, 1–2, 6, 10, 12, 39–40, 68, 80–81, 116, 152, 167; *The American Vine-Dresser's Guide*, 6, 12, 68–71, 80, 192n4, 282

Ellison, William, 14
Environmentalism, 20–22
Epicureanism, 4, 40–41
Espalier, 65–67
"Essay on the Culture of the Grape Vine, An" (Herbemont), 4, 6, 17, 39–85, 144, 165
European practice, 110, 187; advantages of, 177–80; compared with U.S. practices, 233–37; distance of vines in, 165, 168; fermentation in, 127; and soil, 90, 197–98, 258, 270; sugar not used in, 100; trenches in, 197–98, 214
Experimentalist winemakers, 6, 42, 71, 109–10, 128, 158, 225, 236–37

Failure, 5–6, 8, 10, 44, 110, 146–48, 193, 203–4, 206–8, 224–29, 262–63
Farmers (agricultors), 20, 171, 266, 269–73
Farmers' Register, 219, 224, 232, 238, 241–42, 245, 283
Fendall, John W. ("Pomonkey"), 86–87
Fermentation, 74–78, 83–84, 96–100, 125–27, 152, 162–63, 185–86, 239
Fertility. *See* Soil
Figs, 205
Fitzhugh, George, 1, 6, 139, 157, 163, 201n1, 210–12
Florida, 176–81
Fortification, of wine, 1, 4, 83, 95
France: brandy not added to wine in, 103, 128; cold weather of, 165; compared with United States in viticulture practices, 233–37; distance between vines in, 165, 168; grape varieties from, 3; Herbemont as native of, 1, 42; high color of wine in, 100; immigrants from, 259; land prices of vineyards in, 51, 132; and Madeira vine, 230; practice of viticulture in, 64–66; regional practices of, compared, 154, 165; scientific treatise by winemakers in, 39
Frank, Konstantin, 11
Frost, 60–62, 66–67, 121, 145, 157, 173–74, 199, 211, 228, 262
Fungicide, 7

Geiger, Abraham, 2, 6, 14, 170, 213–18, 225n2
Georgia, 13, 116, 130, 132, 201
Gibbs, George, 6, 13, 141–43
Gibbs, Isabella, 13, 141
Gimbrede, Thomas, 174
Government subvention of agriculture, 17–20, 25, 43, 71, 122, 130, 133–34, 135–38, 170, 226, 265–66, 272
Grafting, 2, 7–8, 13, 151, 159–60, 166, 189–94, 203–4, 219–23
Grapes, 10–14, 63, 66; crushing, 75–77, 80–82; harvesting, 74–75, 97, 125, 185, 199; hybridization of, 11, 24, 141, 224; maturity of, 74–75, 83, 97, 127–28, 165, 185; native, 5, 7, 44–45, 56, 59, 73, 85, 190, 203; preserving, 200; saccharine content of, 83–84, 91, 97, 103, 207, 236; seed of, 76, 98, 165
Grape varieties: Alexander, 12; Arena, 11, 13, 39, 73, 125, 141–43, 162, 190; Auvergnat gris, 152; Black Hamburg, 125; Black Prince, 163; Bland's Madeira (Rose Grape), 11, 39, 73, 135, 149, 151–52, 161, 193, 241; Bordeaux Table Grape, 10, 163; Bosc, 163; Burgundy Miller, 10; Catawba, 11–12, 154, 165, 201; Chasselas, 196; Concord, 11, 201; Cunningham's Prince Edward, 231; Damascine, 164; Deo-data, 163; Fox Grape, 142, 193; Herbemont Madeira, 7, 11–13, 39, 73, 98, 101, 125, 135, 149, 152, 160, 162, 164, 186–87, 190, 193, 201–2, 228–29, 230–31, 233, 242; Imperial, 163; Isabella, 11–13, 73, 141, 149, 151, 201; Jacquez Grape, 13; Lafitte (Cabernet Sauvignon?), 163; Lenoir, 11, 13, 73, 98, 135, 162, 164, 193, 207, 242; Long's Arkansas, 10, 13; Madeira, 14, 74, 139, 187, 201, 230, 234; Muney Red, 163, 165; Muscadine, 14, 39, 73, 193; Norton, 11, 231; Perfume Grape, 161; Prince's Violet Madeira, 152; Red Muscat, 126; Rose Grape (*see* Grape varieties: Bland's Madeira); Schuylkill Muscadel, 187; Scuppernong, 115; Sweet Water, 208; Tenier, 164; *Vitis aestivalis*, 7, 13; *Vitis labrusca*, 12–13; *Vitis riparia*, 8; *Vitis rotundifolia*, 14; *Vitis vinifera*, 3, 5–6, 11, 39, 114, 149, 163, 25; Warren Grape (*see* Grape varieties: Herbemont Madeira); White Malaga Malmsey, 11, 13; White Melier, 10, 13, 163; White Olivette, 11, 13, 163
Grapevines, 7; bleeding sap, 67, 122, 145–47, 172–74; buds of, 52–54, 58–60, 62, 91, 93, 112, 120–21, 145, 173–74, 198–99, 223; fruiting, 59, 70, 88–89, 204; leaves of, 61–63, 65, 93–94, 145–46, 175; male, 166, 191, 220; old, 91, 103, 122, 236; planting, 48, 52–57, 60, 89, 119–20, 159, 178, 200, 220; profusion of wild, 44; roots of, 45–46, 53, 55–57, 88–90, 112, 158, 196, 208–9, 215–18, 221; sickliness of, 45, 56; training, 64–66, 68–70, 92–93, 118–19, 180, 200, 234, 236; vitality of American, 92, 233–35; wild, 160
Grayson, William, 14
Guignard, James, 9

Haitian Revolution, 9, 16–17, 22, 251, 254
Hammond, John H., 22
Happiness, 20–22, 40, 95, 128, 171, 226, 266–67, 268, 276–79
Harper, William, 277n
Hautins, 69–70
Hay, 263–64, 267n
Health, 95, 128, 210–11, 269–70
Herbemont, Alexander (son), 10
Herbemont, Caroline Neylor Smythe (wife), 9–10
Herbemont, Nicholas: academic career of, 9, aesthetics of, 1, 4–5, 22, 162; agrarian philosophy of, 15–18, 21–22, 41, 268–74; character of, 4–5; and commercial wine making, 135, 139–40, 225; exchange of grapes and wine by, 10–13,

Herbemont, Nicholas (*continued*)
24, 39, 141–42, 149, 164, 247; experimentalism of, 1–2, 9–10, 15, 24, 73, 111, 215, 282; failures of, 203–4, 206–8, 262; and French experience, 3, 8; garden of, in town, 9, 204, 207, 241–42; life of, 9–10, 25; literary work of, 2, 8, 42, 281–85; mission of, as viticulturist, 41–42, 237; prophecies of, 2–3, 22–23, 134; reputation of, 1–3, 9–10, 18, 24, 144–45, 162, 175, 183, 201–2, 244; success of, as winemaker, 10, 24, 86–87, 227, 241–44, 261; testing of received wine-making doctrine by, 42, 53, 168, 179–81; theory of vegetation of, 63, 88, 145–46, 181; trip of, to France, 113–15, 163
—works of: "Address to the President and Members of the United Agricultural Society," 261–67; "An Essay on the Culture of the Grape Vine," 4, 6, 17, 39–85, 144, 165; "Honesty Is the Best Policy," 4, 20–21, 268–74; "On Emigration to the Western Country," 22; "Memorial to the Senate of South Carolina," 17, 135–38; *Observations Suggested by the Late Occurrences in Charleston*, 15–16, 113, 123n10, 130, 245, 251–60, 282; "On the Moral Discipline and Treatment of Slaves," 21, 275–79; "Speech to the Agricultural Society of South Carolina," 20–21, 130–34, 135; *Vie de Toussaint Louverture* (Dubroca; trans.), 9, 16–17, 251; "Wine Making," 4, 6, 15, 86–99, 219
"Honesty Is the Best Policy" (Herbemont), 4, 20–21, 268–74
Huger, Daniel, 201

Immigration, 3, 8, 17, 22, 71, 121, 123, 133, 137, 254–55, 259–60, 265
Importers, of wine, 95, 128, 185
Inefficiency, in farming, 16, 255
Insects, 5, 7, 66, 147, 157, 204, 207, 211, 216–17, 243; grape root borer, 208–9; june bugs, 211, 242–43; termites, 209
Intemperance, 40, 103–4, 110, 128

Jefferson, Thomas, 4, 6, 16, 252, 282
Johnson, Samuel R., 7
Journal of a Recent Visit to the Principal Vineyards of Spain and France (Busby), 232–34
Julien, Andre, 238; *Topographie de tous les vignobles connus*, 239–40

Kelly, Catherine E., 113n

Labor, 75–76, 82, 97–98, 212, 253–54; immigrant, 3, 8, 17, 22, 71, 121, 123, 133, 137, 259–60
Land values, 19, 51, 122, 131–34, 251
Layering vines, 151, 190–91, 235–37
Legaré, John L., 17, 19, 24–25, 189, 284
Legaux, Peter, 2, 6, 12, 115n5
Lenoir, Isaac, 13
Life of Toussaint Louverture, The (Dubroca; trans. Herbemont), 9, 16–17, 251
Longworth, Nicholas, 3, 6, 10, 12, 14, 149–56, 187
Loubat, Alphonse, 164

Madder, 123
Madeira, 14, 74, 139, 187, 201, 230, 234. *See also* Grape varieties: Bland's Madeira, Herbemont Madeira, Prince's Violet Madeira
Manure, 20, 23, 48, 57, 89, 91, 111, 178, 215–16, 234, 263–64, 270–71
Maryland, 12, 86–87, 156, 161, 206
Maryland Society for Promoting the Culture of the Vine, 86, 139, 157, 163, 189, 210–11
Matlack, Timothy, 111–12
McCall, Thomas, 1, 6, 13, 116, 124–27, 129, 130, 202n4, 228–29, 230
McDonnald, James, 2, 130, 135
Meggett, William, 43
Memoir on the Cultivation of the Vine (Adlum), 6, 282

Memoirs of the Philadelphia Society for Promoting Agriculture, 111
"Memorial to the Senate of South Carolina" (Herbemont), 17, 135–38
Methodists, 275–76
Mildew, 7
Millet, 113
Money worship, 22
Monkur, John S. C., 157–60
Mulberry, 235–37, 246, 257

Nature, 88, 92, 198, 215
New York, 13
Nomenclature confusion, among grapes, 230–31
North Carolina, 213, 245–47
Northerners, 18, 122, 257
Nouveau cours complet d'agriculture, 39, 49, 54
Nursery, for vines, 159, 220

Oats, 264
Observations Suggested by the Late Occurrences in Charleston (Herbemont), 15–16, 113, 123n10, 130, 245, 251–60, 282
Ohio, 149
Olives, 123, 251–52, 255–56
"On Calcareous Manures" (Ruffin), 22, 219, 284
"On Emigration to the Western Country" (Herbemont), 22
"On the Cultivation of the Vine" (Brun-Chappuis), 116–17
"On the Moral Discipline and Treatment of Slaves"(Herbemont), 21, 275–79
Osage orange, 235, 237

Palmyra, 39, 44, 115, 142, 189, 193, 242; commercial wine production at, 139; inheritor of, 261, 281; location of, 2, 9; as name of wine, 210n; purchase of, 9
Parmentier, Andrew, 173
Peaches, 47, 92, 158, 262
Pennsylvania, 12
Philadelphia National Intelligencer, 109
Phylloxera, 2, 7–8, 39
Pierce's disease, 144
Pinckney, Charles Cotesworth, 275
Planters, 16–18, 20, 23, 137, 253, 266, 275–79
Pleasants, Thomas S., 235
Political economy, 16, 20–22, 71, 121–22, 130–34, 137–39, 171, 252–60
Pomology, 195, 206, 262
"Pomonkey" (John W. Fendall?), 86–87
Population, 255, 258–59, 264
Port, 126
Prince, William, 1, 6, 12, 24–25, 141, 151; *Treatise on the Vine*, 6, 210
Prince, William Robert, 13
Print culture, of viticulture, 6–7, 14–15, 40, 87, 177–80, 281–85
Provignage. *See* Layering vines
Pruning, 91–92, 112, 144–47, 188; advantages of, 42, 58–62; best season for, 198–99; black rot eliminated by, 7; and frost, 67, 145, 172–75; of low vines, 64; natural, 59; origins of, folktale, 42; to raise quality, 211; short, objected to, 181; of strong versus weak vines, 53–55, 67; winter, 53–55

Raisins, 196
Ravenel, Edmund, 140
Religion, 21, 269, 275–77
Ringing vines, 207–8
Roman viticulture, 56–60
Rosier, Abbé, 56, 256–57
Ruffin, Edmund, 4, 22, 219, 224, 283–84; "On Calcareous Manures," 22, 219, 284

Sand hills region, 8, 115; as best suited for grape production, 46, 71, 136–37, 246; grape production versus other agriculture in, 46; land value in, 19, 132, 251, 255, 260; native Arena Grape in, 190; pests absent from, 211; wine production per acre in, 132

Science, 2–4; collaborative nature of, 14–15, 24–25, 281–83
Scions, 191–92, 203–4, 220–22; preserving, 191–92, 222
Scribner, Frank Lamson, 7
Scuppernong, 115, 155, 187, 245–47
Seabrook, Whitemarsh B., 18–20, 135
Silk culture, 69, 71, 113, 123, 133–34, 171, 232, 235, 245–47, 257–58
Skinner, John Stuart, 109, 113, 125, 141, 144, 172, 283
Slavery, 3–4, 15–18, 20–21, 251–60, 273, 275–79
Smith, Gideon B., 1, 86, 141, 195, 206, 210–11, 283
Society for the Advancement of Learning at Columbia, 3, 21, 275–79, 281
Soil, 89–90, 120, 133, 154–55, 225, 239, 258, 263–64, 269–71; exhaustion of, 15, 17, 20–22, 161, 263, 270; preparation of, 47–51, 178–79, 197, 272–73; richness of, 44
South, as wine-making region, 1, 7, 15, 24, 46, 71, 115, 121, 177–78
South American wine, 240
South Carolina, 39, 131–32, 136, 170, 255, 258; wine culture of, 24, 43, 139
South Carolina Agricultural Society, 9, 13, 17. *See also* Agricultural Society of South Carolina
South Carolina Board of Public Works, 10, 17, 131n2, 251, 281, 285
South Carolina Lunatic Asylum, 3, 10, 281, 285
South Carolina state legislature, 3, 8, 17–19, 133–34, 135–38, 170, 265
Southern Agriculturist, 189, 204–5n2, 213, 276; Clarke in, 176, 193, 196–97; Herbemont as regular contributor to, 283; Herbemont's letters published in, 14–15; origins of, 130–31; political leanings of, 19; publishes "An Essay on the Culture of the Grape Vine," 17, 85, 165
Spain, 178
Spalding, Thomas, 14
"Speech to the Agricultural Society of South Carolina" (Herbemont), 20–21, 130–34, 135
Staple monocultures, 15–17, 20
Sugar, as additive to must, 1, 83–84, 98, 101, 103, 124–29, 153–54, 156, 162, 164–65, 183–85
Sugarcane, 170
Sullivan, John L., 258
Sunlight, 63, 118–119, 168
Swiss refugee winemakers, 3, 8, 17, 22, 71, 121, 123, 137, 251; land grants for, 137–38

Table Grapes, 2, 13, 195–200
Tariff crisis of 1828, 5, 15, 17, 136, 261, 264
Taste, 39, 72, 86–87, 95, 162, 196–98
Telescope, Columbia (S.C.), 9, 283
Temperance movement, 3, 40–41, 86, 195
Teneriffe, 74
Terroir, 11, 149, 154
Thieves, 147–48, 277
Topographie de tous les vignobles connus (Julien), 239–40
Transplantation, 112, 159, 178, 191, 198, 215–18
Treatise on the Vine (Prince), 6, 210
Trellising, 2, 7, 59, 65, 92–93, 116, 118, 158, 191, 204–5
Trenching, 39, 49–51, 57, 69, 89, 119, 197–98, 213
"Trois six," 103
Troup, George, 130

United Agricultural Society of South Carolina, 4, 130–34. *See also* Agricultural Society of South Carolina; South Carolina Agricultural Society
University of South Carolina, 3, 9

Vats, 76–77, 79–80, 97, 99, 125–27, 186
Vesey, Denmark, 15–17, 251

Vie de Toussaint Louverture (Dubroca; trans. Herbemont), 9, 16–17, 251
Vines. *See* Grapevines
Vineyard, 39–40, 72; as Biblical symbol, 40; expense of, 50–51; height of vines in, 64–66, 118, 165, 180; hilliness of, 47, 158, 165, 169; second year, 55–56, 64; siting of, 43–47, 90, 120, 154, 165, 191, 225, 269; soil for, 45–46, 120, 154, 158, 197, 258, 269; spacing of vines in, 51–52, 119, 167–71, 179; third year, 64–71; water sources for, 45, 89, 165, 216; weeding and hoeing in, 57, 64, 90–91, 179, 215; yield of, 121, 132, 137, 162, 169, 179, 204, 207, 212, 228, 234, 241, 243–44
Vins de liqueur, 128
Virgil, 43, 90, 267
Virginia, 219, 284

Waring, Benjamin, 43
Warren Grape. *See* Grape varieties: Herbemont Madeira
Washington, D.C., 14
Washington, George, 256
Weather, 97; cold, 155, 174, 203–4, 206–7; comparison of, in U.S. South with that in Europe, 258; contending with, 157, 228; dry, 111, 168, 216; frosty, 121, 146, 157, 174, 228, 262; hot, 228; spring, 111, 121; sunny, 101; warm, 203–4, 238–40, 262; wet, 88, 90, 168, 206–7, 216
Weller, Sidney, 6, 245–47
Wine, 94–95, 184; adulteration of, 95, 184; alcohol content of, 1, 184–85; healthfulness of, 95, 128, 210–11; imports, 130, 258; pleasures of, 40–41, 59, 95
Wine making, 72–82, 95–104, 116, 125–29; Americanization of, 3, 6, 116, 154; Biblical sanction of, 40–41, 80; cleanliness in, 74–75, 77, 96; commercial, 5–6, 12, 15; and the crush, 77–78, 97–98; European, 44, 72; and failure, 5–6, 8, 10, 44, 110, 146–48, 193; as gentry pastime, 227; and mixing grapes in vintage, 72–73, 211; and must, 77–78, 83, 96, 98, 126–27, 152, 186; practical judgment in, 88–89, 146–47, 227–28, 271; raisins for, 83, 104; and red wine, 100, 102, 212; and stems in the crush, 82–83, 99, 102, 155, 164; and white wine, 100–102, 211–12
"Wine Making" (Herbemont), 4, 6, 15, 86–99, 219
Wine press, 80–81, 101, 164
Wine tasting, 1, 13, 162
Withers, Robert W., 183
Wool, 123, 251, 256–57, 260